AIRFIX magazine

FOR PLASTIC MODELLERS

SEPTEMBER, 1967

2s

MONTHLY

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IN THIS ISSUE

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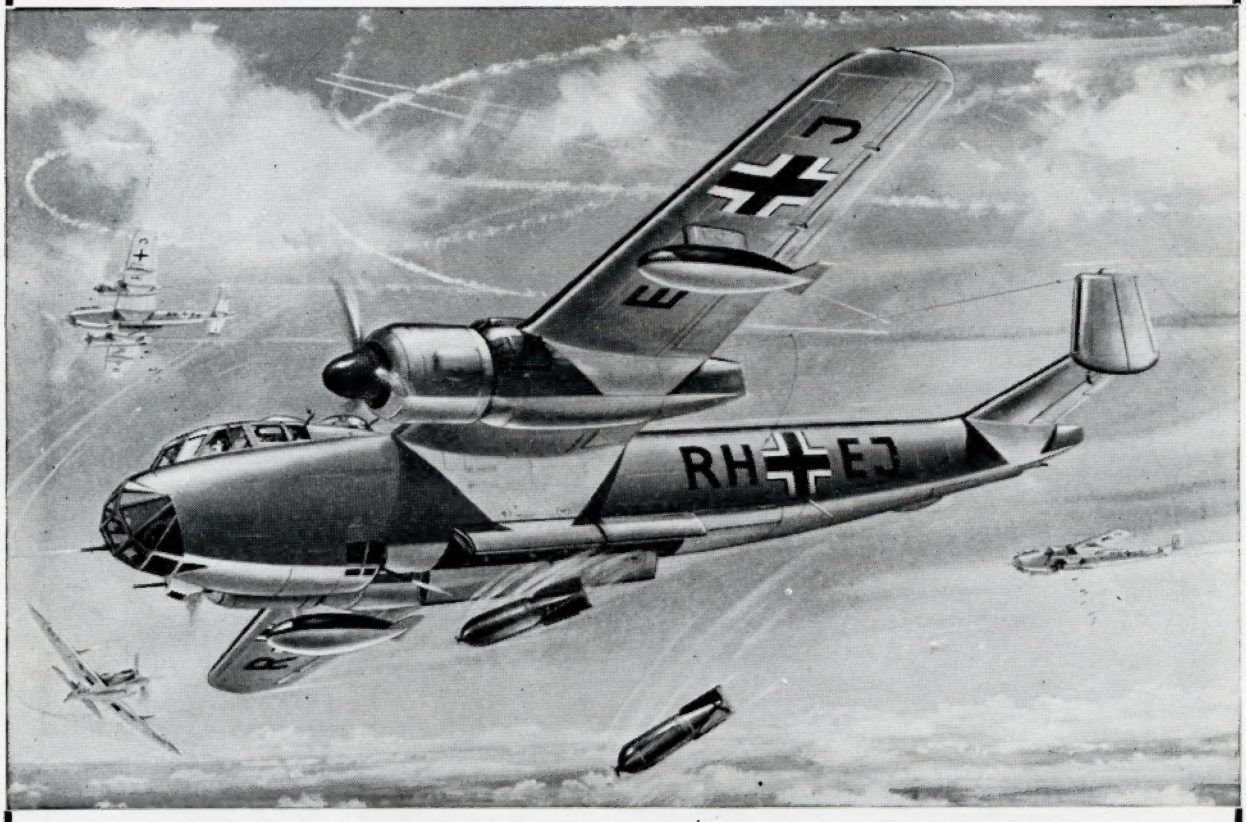

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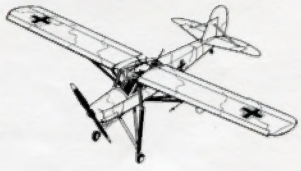

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Volume 9, Number 1

AIRFIX FOR PLASTIC MODELLERS

magazine

September, 1967

IN THIS ISSUE

COVER PICTURE

The prototype Short Skyvan STOL transport dwarfed alongside its big 'brother', the Short Belfast strategic freighter of the RAF. Both types were built at Belfast.

(Illustration courtesy Short Bros & Harland Ltd)

AIRFIX magazine is published for the proprietors, Airfix Products Ltd, by Knightsbridge Publications (1962) Ltd, on the fourth Friday of each month. Annual subscription rate 30s (USA $5.50). Second Class postage paid at New York Post Office, NY.

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NEXT PUBLICATION DATE: September 22, 1967

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Telephone: LUDgate Circus 8842

CIRCULATION DEPARTMENT
Surridge Dawson & Co (Productions) Ltd, Publishing Dept, 26 Aberdour Street, London, SE1
Telephone: BERmondsey 7074/3726

ABC
MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS

Whirlwind XP351 was Coastal Command's entry in the European air sea rescue helicopter competition which Alan Hall reports here. It is here seen in one of the tests.

FIFTEEN teams from seven different countries met at the Belgian Air Force Base at Koksijd from August 3-6 to compete for the honour of being the best air sea rescue helicopter crew in Europe.

For the markings enthusiast this was a heaven-sent opportunity to see all at one time the rare insignia which adorns these helicopters. From the all silver S-61 of the Royal Danish Air Force to the brilliant yellows of the British Whirlwind and the camouflaged Italian Augusta-Bell 204, there was a vast amount of interest.

The meeting at Koksijd, which is 15 miles south of Ostend, on the Belgian coast, was the first to be held and the aim was not only for all participating crews to take part in the competitions but at the same time gain useful experience and discuss methods of rescue operations which had previously not been possible.

During the three days of the meet, flying, for competition purposes, took place every morning after a comprehensive briefing by the Belgian Officer-in-Charge. There were three sections to the competition, a navigation exercise, a rescue at sea and a winching accuracy test.

The contestants had to complete the test with as much speed, combined with accuracy, as possible. The sea rescue for example included a 100 yard run before reaching the aircraft. The crew were then obliged to fly their aircraft out to sea on a set heading and find the occupant of a dinghy about a mile and a half off shore, pick him up and return to base.

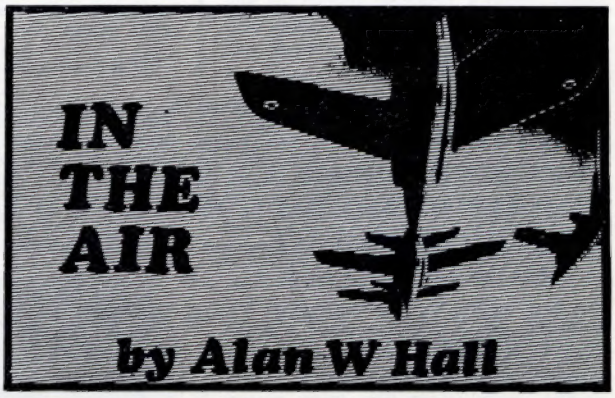
The British crews excelled in this operation. The shortest time that they took was a mere 37 seconds from the time the rescuer was lowered on the winch to the time that both he and the survivor were back in the Whirlwind's cabin.

On the navigation exercise, however, the two RAF teams lost points. The course was a triangular one with turning points out at sea and in a field surrounded by trees. The latter was most difficult to find and if a turning point was missed 100 points were deducted from each crew's score. The Belgians had a considerable advantage in this section as all of their crews were local based and knew their own countryside very well indeed. The Danish participants also had an advantage with their S-61 and six-man crew. With six people to keep a lookout for the turning points they could hardly miss, whereas the three-man Whirlwind team only had two pairs of eyes available at any one time, and then only on one side of the aircraft.

In the final event, which was a test of accurate winch operation, a skill which is by no means as easy as it looks, competitors had to place a heavy weight inside a small circle marked on the runway from a height of 50 metres. Marks were deleted from the total score for coming below the minimum height. Each team had two weights to drop and they all found their own way of doing the job. The British team in comparison to the rest paid out the winch cable before they got to the circle, checked the height and then ran the weight up the runway centre line with a few feet to spare and dropped it squarely in the middle. They scored a bullseye on three goes out of four which put their marks well up the list.

The two British crews, which were led by Squadron Leader Annable from Coastal Command Headquarters at Northwood, came from No 202 and 22 Squadrons. They flew Whirlwind XP351 normally based at Manston.

Strongest of the national teams was the Dutch. Both Royal Netherlands Air Force and Navy crews were present. The RNAF flew Alouette IIIs H-81 and H-20 and came from the Vliegdienst Squadron, Base Flight, at Ypenburg. The naval element, also with two crews, brought SH-34Js from No 8 Squadron which normally fly from the Dutch carrier *Karel Doorman* but at that time were operating from the naval base



at Valkenburg.

The most interesting helicopter was the Danish S-61 of No 722 Sqdn. The Danes have been operating these aircraft for the last two years from their base at Vaerlose near Copenhagen. The aircraft had the serial U-280 and both crews put up excellent performances. They were the eventual overall winners of the competition.

The Italians brought Agusta-Bell 204s. Both aircraft were camouflaged grey and green but had large yellow patches at nose and tail. The words SAR were marked in white on the fuselage sides. Both teams came from the 15° Stormo based near Rome. They brought with them as support aircraft a rare Albatross which, apart from its natural silver finish, had large patches of both yellow and orange dayglo.

Elsewhere on Koksijd airfield preparations were in hand for a national air day on the following weekend. The field's normal residents, which apart from the helicopters, were a training and communications flight, showed their NASSR equipped

The Albatross support aircraft which came to Koksijd with the Italian Air Force team.

C-47s. This aircraft has an F-104 nose mounted on the faithful Dak, giving it a most odd shape and at the same time suggesting an easy conversion using the two Airfix kits. In one hangar a non-flying Spitfire LF16e serialed SM15 and painted grey overall rubbed shoulders with F-104 FX-04 which had been camouflaged in the sand brown and green of the RAF's Andovers.

BRAWDY AIR DAY

THE other highlight of last month, for me at any rate, was my first visit to RNAS Brawdy in South Wales. Being placed in the farthermost corner of Wales, Brawdy is an airfield that rarely gets a regular visit, but what I saw during their recent open day gives rise to the thought that more should be seen of this very busy naval air station.

RNAS Brawdy, which has been in existence since February, 1944, and in Naval hands since 1946, is the home of the Navy's airborne early warning squadron, No 849, equipped with various marks of Gannet, and the centre for the advanced flying training of naval pilots. It also deals with the modification and preparation of naval aircraft for front line service with carrier based squadrons.

Two squadrons, Nos 759 and 738, equipped with Hunter T8 and Hunter GA11s respectively take over the advanced flying training of all naval pilots, apart from those destined for helicopter squadrons, after they have completed their initial flying training on Chipmunks and Jet Provosts at No 1 FTS, RAF Linton-on-Ouse, Yorkshire. All pilots start on the Hunter T8 and after 60 hours flying either continue on the Hunter GA11 or go to the Gannet squadron for the rest of the course.

No 849, under Lt Commander A. W. Roberts, is a strange mixture as it is a training unit as well as the Navy's operational airborne early warning squadron. The training of both pilots and observers is undertaken on Gannet T5s before they are posted to one of the four operation flights stationed on board each of the Fleet carriers. When a carrier is in a home port the flight returns to Brawdy.

With this imposing array of aircraft, Brawdy air day was worth seeing. Every type of Naval aircraft ranging from the home station's Tiger Moth BB694 to a Buccaneer took part.

Two interesting visitors to Brawdy were the Lockheed Starfighter of the Federal German Navy **(top)** *and the Grumman Tracker of the Royal Netherlands Navy.*

Top: *The Danish Air Force S-61 which was the eventual overall winner of the ASR contest.* **Above:** *Spotted at Koksjid was this Belgian Air Force C-47 radar trainer with F-104 'nose'.*

The station had a couple of surprises up its sleeve as well. Most interesting of these was a pair of F-104 Starfighters from the German Navy belonging to Naval Air Wing 1 at Schleswig numbered VA-148 and VB-242. The Dutch Navy sent two S-2 Trackers from No 2 Squadron at Valkenburg and the US Navy provided a P-3A Orion from Keflavik-based No 44 patrol squadron.

The flying display included the normal RAF participation with a Vulcan and Andover doing flypasts and the CFS Red Arrows and Skylarks performing with their accustomed perfection. The Navy provided a new aerobatic team based at Brawdy, called the 'Rough Diamonds' flying Hunter GA11s but best of all was the mass take-off and flypast of the station's Hunters and Gannets. Reminiscent of Farnborough a few years ago the Hunters, 22 of them, Gannets and Sea Vixens from Yeovilton roared down the 7,350 ft runway without pause, forming up to do a very competent fly-past which was joined by visiting Wasps, Whirlwinds and Wessex helicopters from Culdrose. The almost inevitable Swordfish led the procession.

The staff at Brawdy are to be congratulated on a well organised display, a static line-up well above average and a technical display in the hangars which provided interest for all comers from the aviation enthusiast to the holiday-maker looking for a day out with a difference.

NEWS FROM IPMS

MEMBERS attending the meeting of the London Area Branch on July 28 brought along a more than usually varied selection of models for the monthly competition, with subjects including a much modified Ford Anglia, Bleriot Monoplane and a DC-7. The task of judging was quite difficult, although the break from the more frequently seen World War 2 aircraft was appreciated. Winning models from the monthly area competitions will compete in the National Championship to be held in London later this year.

IPMS was well represented in the scale model rally at the Shuttleworth Collection at Old Warden on August 8. John Wilkinson and John Chisman, both well-known as prize winners at the London Area meetings, took first and second prize respectively in the non-flying section.

The next meeting of the London Area Branch will be on August 25 at St Mark's Church Hall, Balderton St, London, W1.

London Airfix stockists, A. Brody Ltd of Bethnal Green, recently held a successful Airfix Betta Bilda competition in their store. Competitors had to guess how many bricks went into the Empire State Building model seen in the background. The answer? 9,496. Winners lined up with their prizes were, from left, Sharon Ward, Danny Milton, Kevin Pike, and Maureen Callaghan.

NEWS FROM AIRFIX

The world's greatest value in construction kits

- Sky Ranger aeroplane
- Porsche Carrera 6 slot cars

AS a departure from the usual range of plastic scale model aircraft kits, Airfix also produce a simple and inexpensive flying model, the Sky Ranger, which will appeal especially to youngsters but will also be fun for anyone else looking for energetic outdoor summer exercise. The Sky Ranger comes in 'knocked down' kit form for very quick assembly and consists of a single wood spar fuselage, stout wire undercarriage, moulded plastic propeller, wheels, clips, and other fittings which simply slide into place on the fuselage spar. Wings and tail surfaces are moulded in expanded polystyrene for lightness and also clip to the fuselage. A rubber band provides the motive power and the aircraft is 'wound-up' in the conventional way with rubber-powered models for launching by hand. Wings and tail are designed to drop off on impact, thus obviating damage if the aircraft flies into any large obstruction.

The Airfix Sky Ranger comes in a clear packaging complete with assembly instructions on the card backing. Price is 3s.

NEWEST release in the Airfix Motor Racing range is a Porsche Carrera 6 to 1:32 scale which is available in both 'standard' and 'Clubman Special' forms to suit slot-racing enthusiasts of any degree of skill.

The model comes ready-assembled in standard guise and features all the latest Airfix developments including the new high-rev 'canned' motor, moulded nylon contrate, and a new-type steering and slot guide assembly. The latter has a full scale lock, is simply fitted or removed by two screws, and has a one-piece blade instead of the two pin guide used previously. A realistic moulded interior is included and carries driver and interior detail. Wheel hubs and other fittings are plated, and clear 'glass' is provided in the cockpit windows and headlamps. In standard form, the Airfix Porsche Carrera costs 22s 6d. Also released at the same price with the same specification is a Ferrari 250 LM car.

The Porsche Carrera Clubman Special has the same body as the standard Porsche, but in component form for easy assembly. Like previous Clubman Specials the entire model is in kit form with everything you require in an attractive bubble packaging. Power is provided by the well-known high performance Airfix Slimline motor, and there are the usual light alloy Clubman wheels, wide tread racing tyres, and light alloy chassis frames. Racing transfers are included and there is a spanner and a full instruction sheet to aid assembly. Price of the Porsche Carrera Clubman Special is 45s.

The 'canned' motor mentioned above is a new exclusive Airfix design with good low speed torque characteristics for both large and small circuits.

THE recently issued Airfix Dauntless kit costs 3s 6d, and not 2s 3d as we mentioned last month. Apologies to anyone who may have been mislead by the incorrect price we mentioned.

ARE YOU A KIT CONVERTER?

We have many letters from readers requesting back copies of AIRFIX MAGAZINE containing conversion articles. Back copies of some issues are still available for the benefit of readers who may have missed or mislaid earlier editions. For example, here are some of the practical articles which have appeared.

1965: September—Jeep conversions and Battle of Britain colour schemes. **1966: March**—Firefly Profile and Red Army equipment. **June**—Half-track conversion and four-stacker destroyers. **July**—RF-4C Phantom conversion. **August**—Catalina conversions. **September**—Matador variants. **November**—Sturm-tiger conversion. **December**—Me 262 conversions and half-tracks.

1967: February—Stuka conversions and Stirling markings. **March**—Household Cavalry conversions and AEC Y Type lorry. **May**—Crimean War and Do 217 conversions.

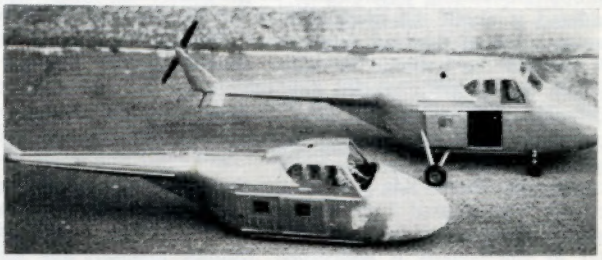
Would readers please note that all issues **not** *listed above are now out of print and can no longer be supplied.*

Back copies cost 2s each (including postage) for all copies up to and including September, 1966. From October, 1966, onwards the cost is 2s 6d an issue, post paid. Please address all requests for back copies, together with your remittance, to our circulation department at SURRIDGE DAWSON & CO (PRODUCTIONS) LTD, PUBLISHING DEPT. 26 ABERDOUR STREET, LONDON SE1.

Prototype of the conversion described here, the Gnome-powered Whirlwind HAR10 is seen above in RAF service. Note in particular the nose shape and intake. Other pictures on this page show two models under construction, with and without open door, and a completed model in RAF finish. Colour scheme is yellow with black lettering.

GNOME-WHIRLWIND

An interesting Airfix kit conversion suggested by C. R. Whitton



THE Whirlwind is an extensively developed version of the Sikorsky S-55 which is built under licence in Great Britain by Westland Aircraft. It has been produced in three distinct versions, viz, the Series 1 which is powered by a 600 hp Pratt and Whitney Wasp, the Series 2 which is powered by a 750 hp Alvis Leonides Major 755 radial air-cooled engine, and the Series 3 which is powered by a 750 shp Bristol Siddeley Gnome 101 turboshaft.

The aircraft depicted by the Airfix kit was one of the first British produced Whirlwinds and to convert it to a Gnome powered Series 3 several modifications have to be made. Though this is quite a drastic conversion, it results in an extremely interesting addition to the existing limited range of 1:72 scale helicopter models.

CONVERSION DETAILS

CUT off tail assembly on line 2-2 and remove section 3. Cement the windows in place and when the cockpit assembly is dry, cement in ribs in starboard fuselage half, then cement fuselage halves together. Remove the beacon holder (4) with a sharp knife, fill in hole with plastic putty, and when set smooth to shape of tail boom. Cement the halves of the tail boom together, and when dry cut off the vertical stabiliser and replace with one made of balsa (5) as in the diagram.

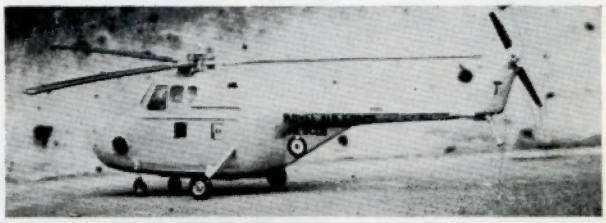
Fill in the hole on the underside for the stand if desired, also fill in the hole for the small tail stabilisers with plastic wood and smooth down when dry. The small stabilisers (8) should be separated and thinned down then be cemented in their new horizontal positions as indicated on the plan. Cement the tail boom in place on the rear fuselage and when dry fill in all holes at the join and smooth down with fine emery paper. Fill in the hole for the radar reflector.

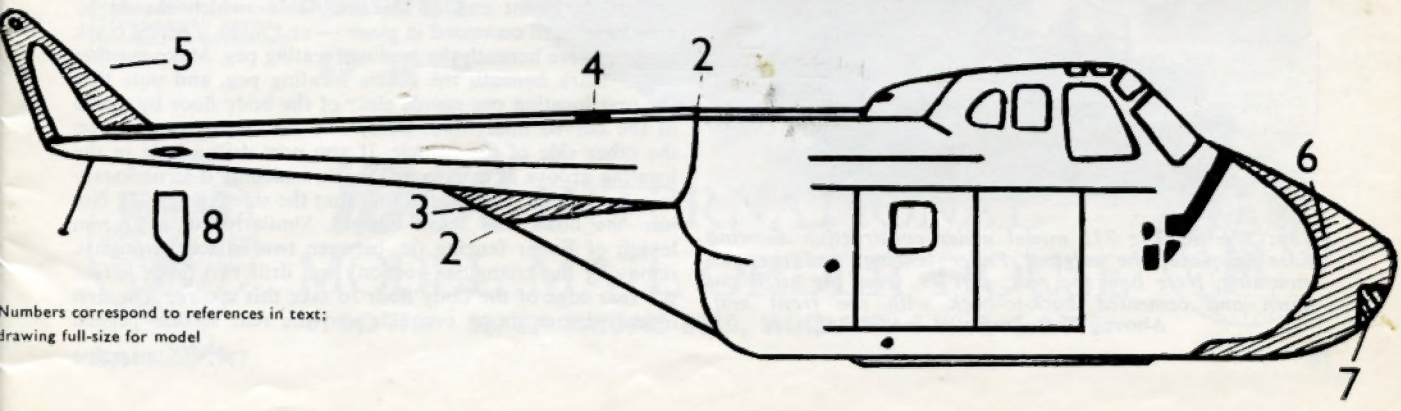
The main rotor blade assembly should now be completed as in the instructions (stages 13-15) and then set aside to dry. The lip on the air intake should be removed and the intake filled in with plastic wood. A new nose cowling (6) should now be moulded on to the front fuselage to the shape as in the plan and when set should be smoothed with fine emery paper. An intake section (7) has now to be cut from the nose.

Fix the front transparency in place and fill in any gaps with plastic wood. Using a cut off pin, fix the tail rotor blades in place and the tail rotor blade retainer on the protruding end. Complete stages 19-20 as in the instructions and cut a hole for the new balsa exhaust and cement in place. Stages 22-25, as in the instructions, should now be carried out.

If an open door is wanted it should be cut from the model and replaced as shown in the plan when thinned down. The model is now ready, after a final smoothing down of all rough corners, for a thin coat of white paint to act as an undercoat. The model can now be painted in the required colour scheme. An example is given of an RAF HAR10 in air-sea rescue finish.

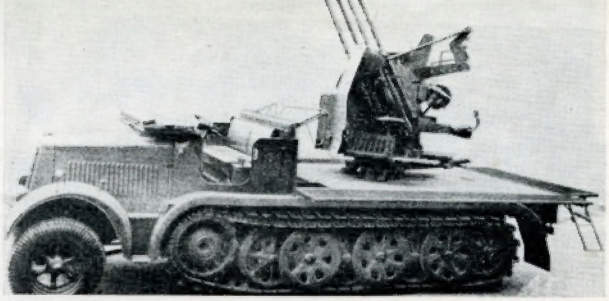
Note that all other constructional work, including cockpit interior assembly follows the Airfix kit instructions.

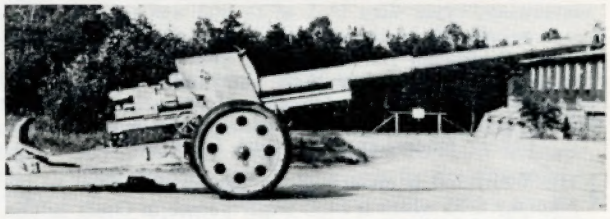




Numbers correspond to references in text; drawing full-size for model

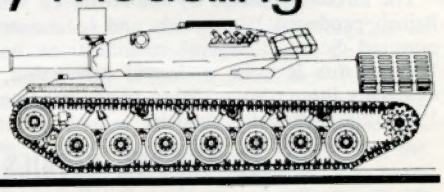
Flak 36 kit conversions





Top: *The Sd Kfz 7/1 showing details for modellers.*
Above: *The Pak 43. This one has plain disc wheels which could be mocked up easily in model form.*

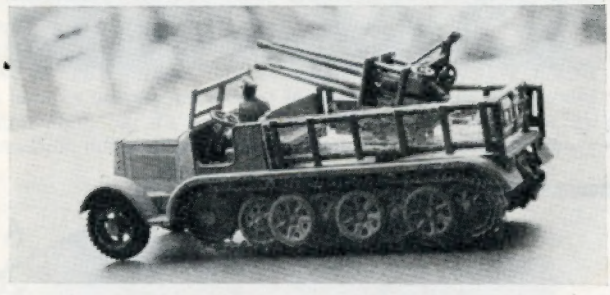
Military Modelling by Chris Ellis



RELEASE of the Sd Kfz 7 kit and Flak 36 in the Airfix range has naturally brought forth many conversion requests, and in this issue and next I'll be dealing with the simpler modelling possibilities. In fact, the first to be considered is about the most difficult of the lot and involves quite a lot of fiddling detail work, though nothing which is beyond the average modeller. This is the Sd Kfz 7/1 which was a self-propelled flak vehicle for the anti-aircraft defence of units in the field. It was also, on necessary occasions, used against ground targets though this was an incidental role.

Basically the Sd Kfz 7/1 was the standard semi-track 8-ton chassis with a quad 2 cm Flakvierling 38 mounting in place of the troop-carrying body. Construction of the model as far as the chassis is concerned, follows precisely the kit instruction sheet. Then continue by fitting the front seat, steering wheel, scuttle, and bonnet in that order. Before proceeding further, file away the locating ridges for the rear two bench seats. The front 14 mm *only* of the body sides are required (parts 44 and 45) and a vertical knife or saw cut will give you these sections. These parts are cemented in place each side of the front seat, after which work can commence on equipping the vehicle with its armament.

The complex part of the model involves the hinged body sides which were mesh covered and dropped flat to provide a clear traversing arc for the Flak 38 when in action. On the real vehicle these simply dropped like the sides of a truck, but as this would be very difficult to achieve in 1:76 scale — unless you are skilled at soldering up tiny hinges — I devised a fairly crude but simple way of representing this feature. Basically it involved pegging the body sides and rear in either the upright or flat positions according to whether the model was travelling or 'in action'.



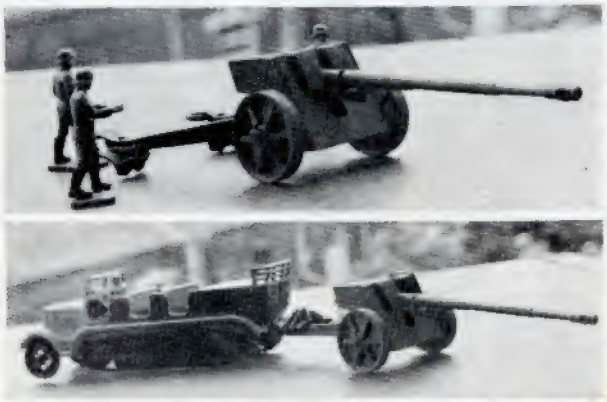
Top: *The Sd Kfz 7/1 model under construction showing sides in place, the original Faller fencing, and the gun mounting. Note how the seat, part 49, from the kit is cut down and cemented back-to-back with the front seat.*
Above: *The completed model.*

The body sides were, in fact, basically frames and quite by luck I found that the rustic fencing made by Faller was dimensionally correct, if slightly overscale in thickness, for the framing. After painting the overscale thickness becomes less obvious, so I decided to use the Faller fencing, modifying it by cutting it into two 43 mm lengths (one for each side) so that two of the plain uprights formed the vertical ends of the framing. This left a triangular-shaped upright section in the middle, which is carefully cut away to leave only the locating peg in place beneath the lower rail. The Faller fencing has some knot holes moulded into it which need carefully filing or sanding away, after which each side frame can be tried for size in the body side locating groove on the body floor. Butt the leading edge of the framing up against the front end of the body side—which should by now have been cemented in place — and make a pencil mark in the groove beneath the leading locating peg. Make another pencil mark beneath the centre locating peg, and note that the rear locating peg stands clear of the body floor by virtue of the curved mudguard. Carry out the same procedure on the other side of the vehicle. If you now drill a hole in the locating groove at each pencil mark, widening it as necessary to take the peg, you should find that the side frames will clip into the holes and stand upright. Similarly cut a 21 mm length of Faller fencing (ie, between two adjacent uprights, removing the triangular section) and drill two holes across the rear edge of the body floor to take this section. The first model picture shows one side and the rear section pegged

in place, and should make the foregoing quite clear. Drawings D and E show the side and rear framing patterns, and bring us to the next stage which involves the addition of six upright frames to the sides, and three to the rear, cut from strips of card or plastic card. When these are cemented in place — also visible in the first model picture — paint them in the desired colour and leave to dry. After setting, the mesh is very simply made by cementing strips of nylon stocking on the inner faces (use UHU) and trimming.

Next problem to overcome is 'dropping' the sides to the flat position. This I achieved by cutting the complete hub —but not the spokes—from the centre of one of the gun carriage wheels from the kit. This will give you a washer-like piece of plastic which should be filed flat on one edge and cemented to the body floor adjacent to the hole which was drilled for the centre locating peg. This will enable you to unpeg the sides from the upright position, pop the centre locating peg into the 'washer' and thus retain the sides in a horizontal plane. The peg is quite a tight fit in the washer and I found that the sides were held quite rigid. It is not possible to do this at the rear, but here I drilled holes in the rear edge of the body floor just above the curve of the mudguards. All that remains is to fit the ladders on the rear body face—I used 00 scale signal laddering—shown in E.

For the Flak 38 gun mounting I used the fitting straight from the Midori Flakpanzer IV which I had converted to a normal Pz IV. All that is really necessary is to cut away the gun shield, drill a hole dead central in the body floor

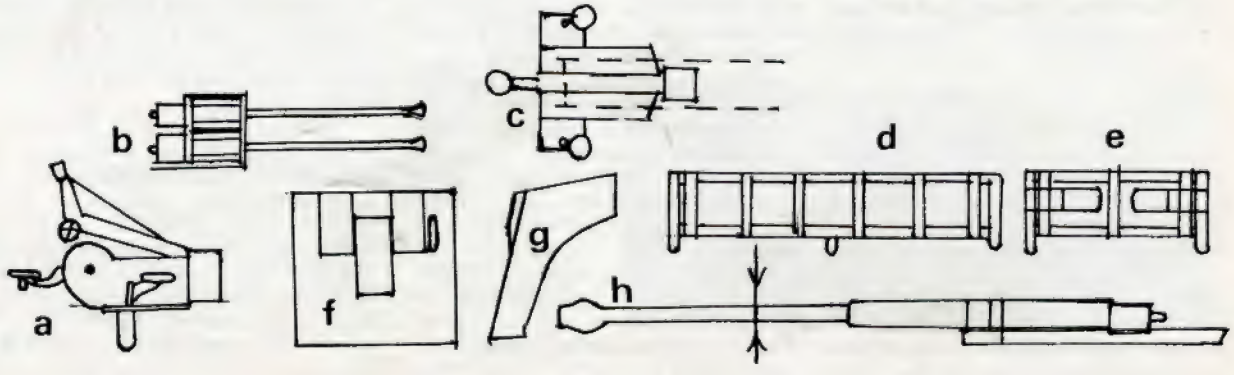


Top: *The completed Pak 43 with crew from German armoured car.* **Above:** *The completed model towed by the half-track.* **Below:** *Full-size model drawings. A, B, C are gun mounting components. D and E are body sides and rear. F and G are Pak 43 shield. H is modified barrel.*

Top: *Sd Kfz 7/1 'in action' with crew.* **Above:** *The Pak 43 and Flak 38 components.*

and peg the complete mounting in place. However, I added extra detail in the shape of a seat at the rear for the gun layer and seats—and an extended platform from plastic card—on each side of the mounting for the gun loaders. Also I added the sighting quadrant on top of the mounting, using plastic card and a pin for this with a tiny square of plastic for the gunsight. The seats came from the Flak 36 kit and were used exactly as moulded. They are not quite the right pattern, but as near as makes no difference. If by any chance you don't have a Midori Flakpanzer kit, the Quad 20 mounting is not difficult to make up from scratch, using plastic and pins. Drawings A, B and C give details. For crewmen I used the figures from the kit.

The next model is easy and simply uses 5.5 inch gun parts from the Airfix Matador kit plus the gun barrel from the Flak 36 to make the very potent Pak 43, which was a late-model '88' on a wheeled field carriage. The 5.5 inch carriage and spades are used straight from the kit, though the hump is filed from the rear lower face of the trails, and the recoil springs are discarded. For the carriage wheels I used the steering wheels from the Airfix Mk I tank, with a card disc inserted between the two halves. The barrel came from the kit, modified as in drawing H with a new muzzle and barrel end cemented on—and grafted over with Sellotape—from the Airfix Tiger kit. The arrows show where the join is made. The barrel is cemented straight on to the carriage, packed up about 4 mm with scrap plastic, and a shield is made up from plastic card. Two of the parts from the Matador kit (26 and 27) were filed to shape and stuck on the shield to depict the trunnion covers.



CAFE IN CARD

A SIMPLE SCENIC MODEL

BY MICHAEL ANDRESS

THIS model is based on an actual structure situated near Battersea power station. From the first time I saw the prototype I felt it would be a very suitable subject for modelling. It is small but has enough detail to be interesting and it is typical of the architecture seen in many industrial areas. The cafe is now disused and the windows are blocked with planking and sheets of corrugated iron; I modelled it as it is because I felt it would make a change from the prospering businesses so often seen on model railway layouts but only a few alterations would be needed if you wished to 'reopen' Bill's cafe.

It is a purposely simple model which allows great scope for realism, and it costs little more than a sheet of brickpaper. You can use the photos of the front, back, sides and roof to take off approximate measurements directly for 4 mm scale. Make sure all the parts will fit square and true before you start assembly. Construction is straightforward and follows the usual principles.

Walls are of 1/32 inch thick card with bevelling at the corners to give a neat fit. Brickpaper (I used Superquick D2, yellow brick) is applied before assembling the sides. Make two diagonal cuts in the paper across each window opening, forming an X, and fold the brickpaper back to cover the exposed edges of the card. For the back door cut a Y and fold similarly. Scribing, very gently, on the back of the paper where it folds back to cover the edges of the openings gives a neater fold. Commercially available corrugated copper sheeting painted grey and cut slightly larger than the window openings is glued behind each of the openings to block them up. To make the brick facings above the upper windows, cut strips from the capping provided at one edge of the brickpaper sheet, one brick length wide (3 mm) and a little longer than the width of the windows. Glue these strips on to pieces of slightly larger thin card and when the glue has set firmly, trim off the excess card. With a knife or scissors cut three-quarters of the way along each of the lines between the individual bricks. This will give the strips the slight curve needed. Trim accurately to length, and glue in place over the windows.

The facing above the small back window and over the back door are also made from the capping, this time only half a brick wide (1½ mm) and 10 mm long for the window, 11 mm long for the door. The brickpaper is glued to thin card and the facings are then fixed in position. The window sills and the back doorstep are of thin card painted concrete grey before fitting in place. The back door is made from two layers of thin card with the three panels cut out of the outer layer.

The shop front is built up in layers. The opening, 40 mm long and 36 mm high, will have been cut out of the front before the brickpaper was applied. Cut a piece of 1 mm thick card to fit behind the lower half of the front and cut out the openings for the door and for the window above the door. This piece should be 1 mm less than the front proper at each side so as not to interfere with the assembly of the front and sides of the building. Another piece of 1 mm thick card is fitted behind the door opening to form the front door and a scrap of transparent sheet is glued in place behind the window.

Fit a strip of card or wood 1 mm wide and 1½ mm deep at each side of the opening and at the other side of the door opening. Fit a further piece across above the door, at the bottom to form the doorstep, and along the bottom of the remainder of the opening. Paint all these strips before fixing them in place. The strips fit against the backing piece behind and protrude ½ mm in front of the brickwork. I used a sheet of thin wood (obtained from a wooden matchbox) to represent the boarding. Cut this accurately to fit the space and then scribe it to simulate the individual planks. Paint it with a thin wash of black or dark brown colour and then glue in position. The two sign boards are both made from 1 mm thick card. At the back of the smaller one file a 1 mm wide and ½ mm deep grove at each end so that this piece will fit neatly over the two upright strips. Paint the boards and letter them, using Letraset sheet 751, before fitting them into place.

The four walls are then glued together — interior bracing at each corner will help to keep everything square and true as the cement sets. Then glue 15 mm wide strips of 1 mm thick card to the inner sides of the walls at their top edges cutting these strips to fit neatly at the corners. Fix brickpaper to the inner surfaces again cutting so that the corners are a neat fitting. Then cut strips of brickpaper one brick wide (with the brick courses running across the width of the strips) and glue these in place on the top edges of the walls mitreing them to fit at the corners.

The roof of 1 mm card can now be fitted. To do this cut a rectangle of the card of the correct front to back size but of greater width than will be needed. Scribe along the ridge line and bend to the approximate angle of the roof. The roof can now be trimmed and tested for size alternately until it fits accurately. The pitch of the roof is not critical but try to make the peak of the roof about three brick

rows below the tops of the front and back walls while the outer side of the roof is about nine rows below the upper edge of the side of the building.

I glued slate paper on to thin card and using the marked slates as a guide cut off strips two slates wide. Then with a pair of scissors I cut part way along the printed lines between the slates from the botton edge and also cut off some of the corners to make a number of broken slates. Glue these strips in place on the roof starting from the bottom edges and working upwards, overlapping by the width of one row of slates each time. Breaking the row partway along and leaving a gap stimulates a missing slate; putting a single slate in the gap but lower than others in its row represents a slipped slate. Adding these broken, slipped and missing slate details gives variety to a part of the model which is prominent and improves the realism considerably. Fit the capping ridge strip, also of slate paper glued to thin card. I then painted the roof with Floquil grimy black which gives a very effective matt finish of a very dark grey colour, much more realistic than a full black.

The concrete facing above the upper window on the front of the building is easily built up from three strips of thin card 4 mm, 2 mm and 1 mm wide, and long enough to be turned around the corner for 2 mm at each side. Cut these longer than needed and trim to size when glueing in place (remember that the two narrower strips need to be longer than the 4 mm wide strip if they are all to go round the corners). Painting these strips before fixing them to the wall makes a neat job easier to achieve. The wooden trim above the Bill's Cafe sign is added now. Build it up from 1 mm thick card painted and then glued in position.

The chimney is built up from layers of 1 mm thick card with an outer layer of thin card. The two layers of the 1 mm card at the outside are less deep than the inner three so that the chimney will fit neatly over the top edge of the side of the building. The thin card layer at the inner side is full height and helps to hold the chimney firmly in position. The brickpaper covering can be added after the chimney has been filed (if necessary) to make it fit accurately in position. Care is needed to fix the brickpaper so that the courses are level and meet

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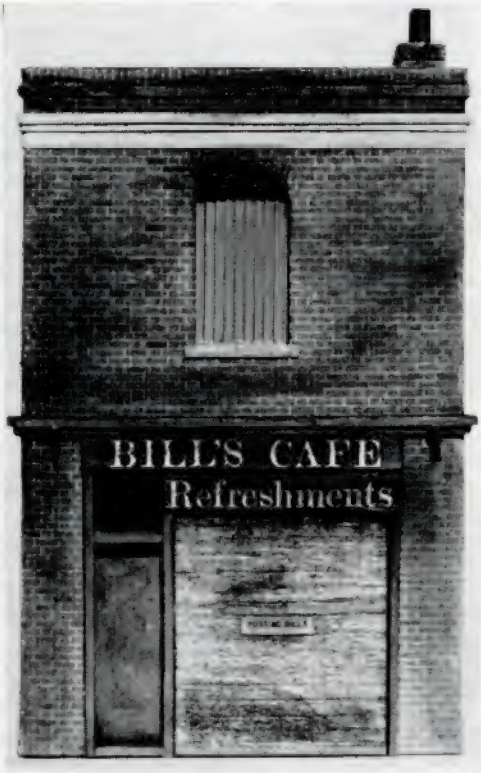
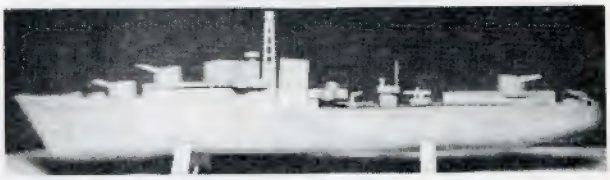


Pictures on this page show front, back, and side of building full-size for 4 mm (OO) scale. Posters reproduced below are full-size for model and may be cut out and cemented in place if desired.

'J-N' class destroyers

'COSSACK' KIT CONVERSIONS

BY IAN WHITEHEAD



Top: *HMS* Jaguar *as she appeared in 1940, modelled from the Airfix* Cossack *kit as described here.* **Above:** *HMS* Milne *under construction with lattice mast.*

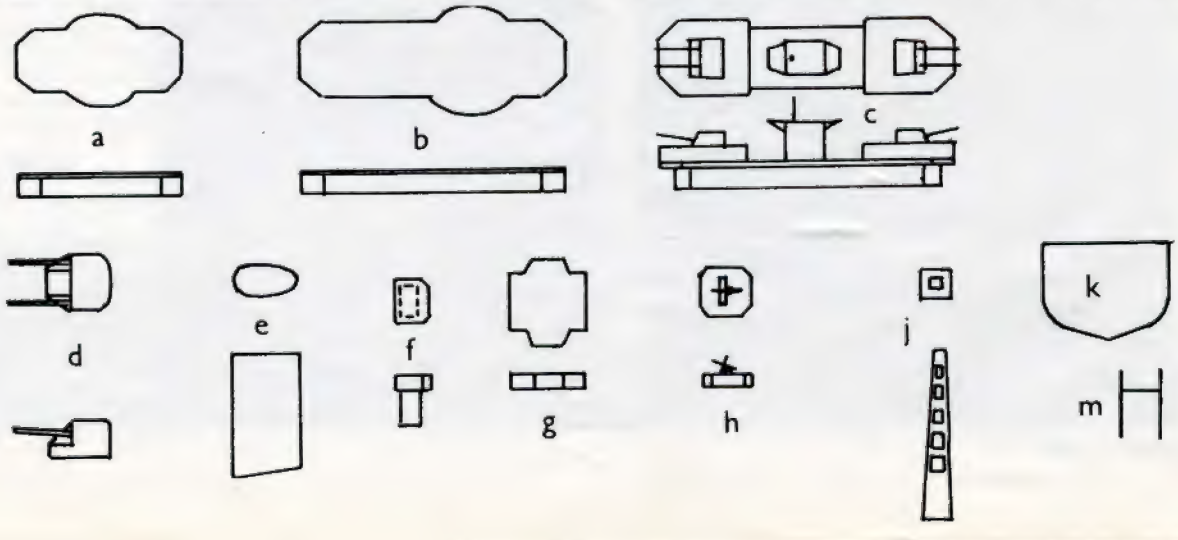
SUBSEQUENT to the introduction of the 'Tribal' Class destroyers, and due to the continuing need for larger fleet destroyers, five further flotillas were laid down between 1937 and 1940, comprising the 'J', 'K', 'L', 'M', and 'N' classes. These were a reduced design of 'Tribal' class, mounting two less 4.7 inch guns, but with two banks of torpedo tubes. One boat of each class was fitted out to act as Flotilla Leader, in contrast to the previous practice of building a specially designed leader. They were the first longitudinally framed destroyers to be built for the Royal Navy, and the number of boilers was reduced to two, thus introducing the single funnelled design to the fleet. They proved to be excellent ships and did yeoman service, most of them serving at some time or other in the Mediterranean Fleet, where they suffered heavy losses.

Of the 40 boats built, only 17 survived the war, and the first three classes had disappeared before 1950. In 1958, four of the 'M' class were transferred to the Turkish Navy where they still serve, and the Indonesian Navy received one in 1951 from the Royal Netherlands Navy. Four of the 'N' class served with the Australian Navy during the war, two with the Netherlands Navy and one was manned by the Polish Navy, as was one of the 'M' class. The 'J' and 'K' classes went to the Mediterranean from the Home Fleet in 1940-1941. *Jervis* (F00), *Javelin* (F61), *Kelvin* (F37) and *Kipling* (F91) returned to Home Waters and then went back to the Mediterranean, and *Jupiter* (F85) was lost whilst serving with the Eastern Fleet.

The 'L' class served most of the war in the Mediterranean, forming the escort group for the famous Force 'H' for part of the time, whilst the 'M' class was transferred from the Home Fleet to the Mediterranean in 1944. The 'N' class served at Home and the Mediterranean, with the RAN boats in the Far East. The 'J', 'K' and 'N' classes were all to the same design, mounting six 4.7 inch guns in twin shields and ten 21 inch torpedo tubes in two quintuple mounts, whereas the 'M' and later 'L' class had their 4.7 inch guns in enclosed power-worked turrets. *Lance* (F87), *Gurkha* (F63), *Legion* (F74) and *Lively* (F40) were completed with eight 4.7 inch guns in twin shields. These two classes mounted two quadruple 21 inch torpedo tubes. In 1940-41 the after tubes in the 'J' and 'K' classes were replaced by a 4 inch AA gun, and the 'N' class was completed to this arrangement. Later in the war the survivors had this gun removed and replaced by the tubes, and *Javelin* and *Jervis* had lattice masts fitted.

The 'L' class also had the aft tubes removed for a 3 inch AA gun in 1941-2, but the tubes were remounted in 1944 in *Lightning* (G55), *Lookout* (G32) and *Loyal* (G15). The 'M' class was completed with one set of tubes and the 3 inch AA gun but by 1944, *Marne* (G35) and *Matchless* (G52) had two sets of tubes and lattice masts were fitted in *Mahratta* (G23), *Marne*, *Matchless*, *Meteor* (G73) and

Below: *Full-size drawings for 'J-N' class destroyer conversions.* **Key:** *(A) 'X' gun deck, standard ships. (B) 'X' gun deck, flotilla leaders. (C) 'X' gun deck for* Gurkha, Lance, Legion, *and* Lively. *(B) and (C) set 15 mm from stern. (D) Turrets for 'L' and 'M' classes. (E) Funnel. (F) Searchlight stand. (G) Pom-pom platform. (H) 3 inch AA gun 'tub'. (J) Lattice mast. (K) Bulkheads. (M) WT mast.*

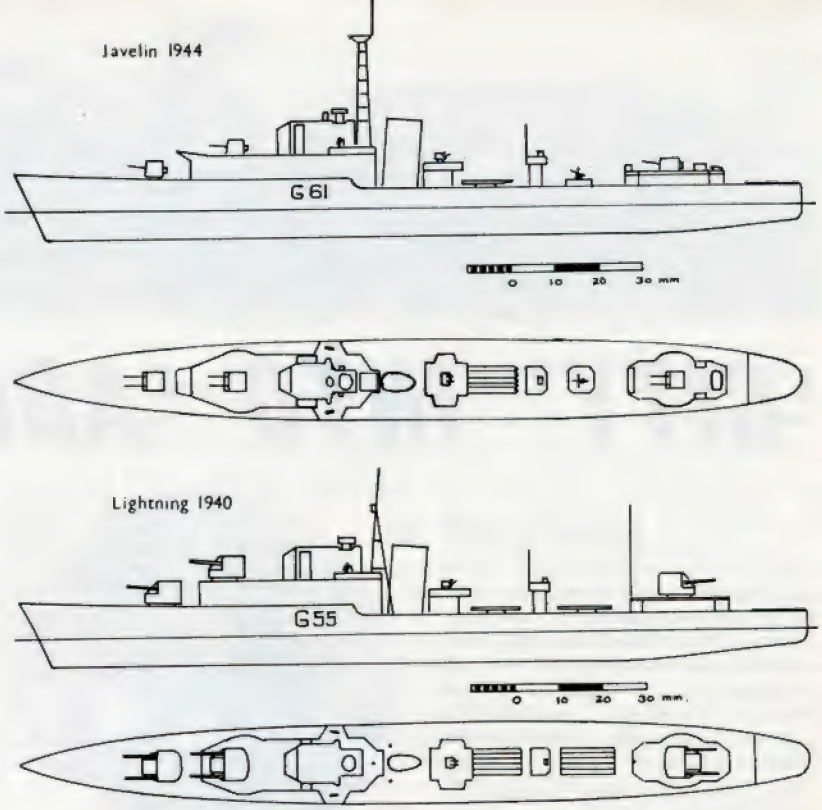


Milne (G14).

When the *Gurkha* of the 'Tribal' class was lost, the men of the Gurkha regiments each subscribed a day's pay for a new ship, and the *Larne* was renamed. The *Marksman* was also renamed *Mahratta* as a gesture to the Indian regiments. *Nerissa* (G65) and *Myrmidon* (G90) were the Polish manned vessels and were renamed *Piorun* and *Orkan* respectively. *Noble* (G84) and *Nonpareil* (G16) were sold to the Dutch in 1942 and renamed *Van Galen* and *Tjerk Hiddes* respectively.

With 40 ships and variants of the same ship, there are many models to be made, and these employ the 'Cossack' kit. The 'L' and 'M' classes were 15 ft shorter, and 'J', 'K' and 'N' classes 20 ft shorter, than the 'Tribals', so the conversion commences with the cutting of the hull and upper deck to achieve the correct length. This piece is taken from the parallel section astern of the fo'c'sle break, and two plastic card bulkheads should be made to the pattern given. These bulkheads are inserted 115 mm from the stem and 63 mm from the stern, if the shorter version is to be modelled. For the 'L' and 'M' classes these dimensions should be 118 mm and 63 mm respectively.

The dimensions are put on the underside of the deck moulding and transferred to the hull. It is important to ensure that these bulkheads are fitted vertically. When they are set, the hull portion between them is removed and the two resulting pieces cemented together on the bulkhead faces. The hull is smoothed with 'wet and dry' paper after any necessary filler has been added at the joint. The deck moulding is now cut approximately 75 mm from the stern and the required length removed from the after portions. All projections except the depth charge equipment are removed from the lower deck aft of the pom-pom platform, and all holes plugged. The funnel was larger than the forefunnel in the kit and has to be made from balsa wood to the pattern given. All balsa components are given a coat of shellac sanding sealer, sanded and finished with two coats of paint.



It is now necessary to decide which vessel is to be modelled and for my examples I selected *Jaguar* in 1940 and *Milne* in 1943.

To complete *Jaguar* (F34), the fo'c'sle is built to the kit instruction, but I mounted Multiple MGs in the bridge wings. Two sets of quintuple tubes were fitted, these being spares from a 'Daring' conversion, and the searchlight platform between them was made to the pattern given. 'X' gun deck was made from balsa wood with a top layer of 10 thou plastic card for blast screens and the outline for this is given.

Below: *Hull construction showing how* Cossack *hull is shortened. Scale drawings at top of page show the slight difference in length between the classes.*

To improve arcs of fire, the mainmast had been removed by this time and WT spreaders made from stretched sprue were fitted to the forward end of the searchlight platform. Patterns for 'X' gun deck for flotilla leaders are given, as the aft deckhouse was longer in these vessels. The platform immediately aft of the funnel was altered by removing the two wings and the boxes in the centre. The pom-pom was mounted on this component and the screens made up from card. Alternatively, this deck can be remade from card to the pattern. 'A', 'B', and 'X' gun mountings were the twin 4.7s from the kit, and the addition of boats, rafts and torpedo cranes completes this model.

HMS *Milne* was chosen since it was the 'M' class leader and had the longer deckhouse aft. These boats had turrets, and I made a passable replica from the 'Daring' turrets. These turrets do not have the guns spaced sufficiently far apart, so I filed the apertures off completely and refilled this portion with balsa wood, before fitting the 'Daring' guns. Reference to the sketch will make the new shape clear. The aft set of torpedo tubes had been removed, to make way for a 3 inch AA gun. This I got from a 'Campbeltown' and fitted it with a card shield.

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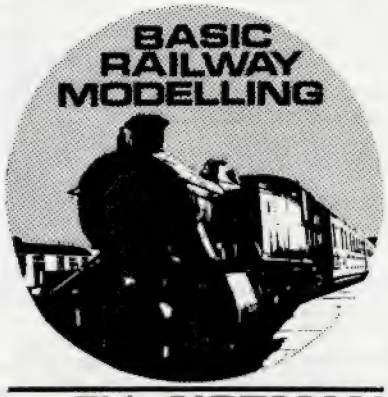
'CITY' INTO 'ABERDARE'



BY **NORMAN SIMMONS**

IF readers have been following my recent series of locomotive conversion articles and have built a GWR Mogul with motorised tender they will by now have accumulated a number of left over parts from the *City of Truro* and Prairie Tank kits. Some of these can now be put to good use to help make a GWR 26XX or 'Aberdare' Class 2-6-0. One more *City of Truro* kit is also required for the boiler.

The 'Aberdare' Class consisted of 81 locomotives built between 1900 and 1907. Scrapping began before World War 2 but the wartime need for locomotives ensured a reprieve for the remaining members of the class and over 30 survived the war. The last was 2667 which was withdrawn in October 1949.

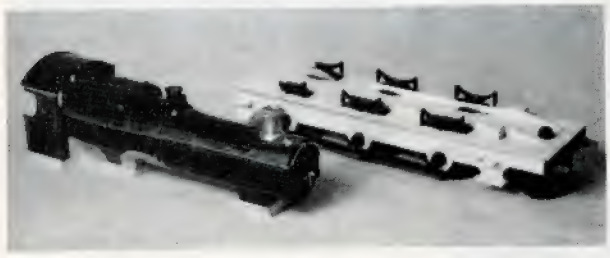
These outside framed 2-6-0s were absolutely unique. They had, however, an active life on the GWR and could often be seen on freight and mineral trains. Their use on coal trains from South Wales, in fact, earned them their nickname 'Aberdare'. At speed the sight of their outside cranks and connecting rods flashing up and down was quite fascinating especially as their small driving wheels made such a rapid movement.

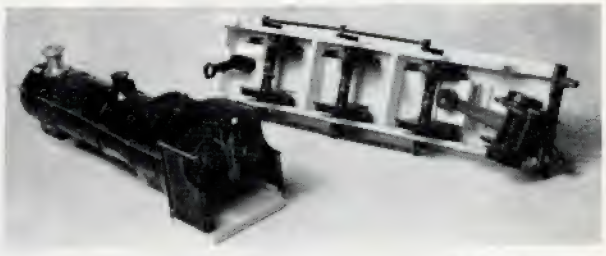
For the coupled wheels in this conversion I used *City of Truro tender* wheels left over after the motorising conversion described in the June issue. They are only a scale 4½ inches less than the 'Aberdare' coupled wheels's 4 ft 7½ inches. Four and a half inches is 1½ mm in 4 mm scale which is hardly noticeable, especially when one considers that most of the wheel is hidden by the outside frames anyway.

The outside extended axles were built up by cutting off the axle extensions from six *City of Truro* coupled wheels and drilling out the backs of these extensions with a No 42 drill. This makes them a nice force fit on to the short axle extensions of the tender wheels. The tender wheel halves can be cemented together at this stage but do *not* cement the axle extensions in place. It will be necessary to move these later on when the cranks are installed and have to be properly quartered.

The outside frames were cut from 60 thou plastic card. Particular care needs to be taken with these items to get the axle holes dead in line. As a precaution it is advisable to hold both frames together so both can be cut and drilled at the same time. I cut the two strips of card from which my frames were made approximately 1 inch over length at each end so that they could be securely bound together with self adhesive tape. In drilling the axle holes it is advisable to start with a small drill and work up to the final size. It is also very advisable at this stage to take the opportunity of drilling the coupling rods at the same time as the frames. I made these out of a pair of *City of Truro* coupling rods jointed and cemented together. The axle holes in the frames were first drilled with a No 56 drill. This made an exact push fit hole for the coupling rod pin which was then used to hold one end of one of the coupling rods to the frame. The second coupling rod was similarly held at the other end. The rods were then brought together over the centre driving wheel axle hole, marked off, jointed,

Below, left: *Completed body and chassis for an 'Aberdare' 2-6-0.* **Below, right:** *Underside view of plastic card chassis shows 'City' tender wheels with extended cranks and ex-Prairie pony truck. Completed model is shown at top of page.*





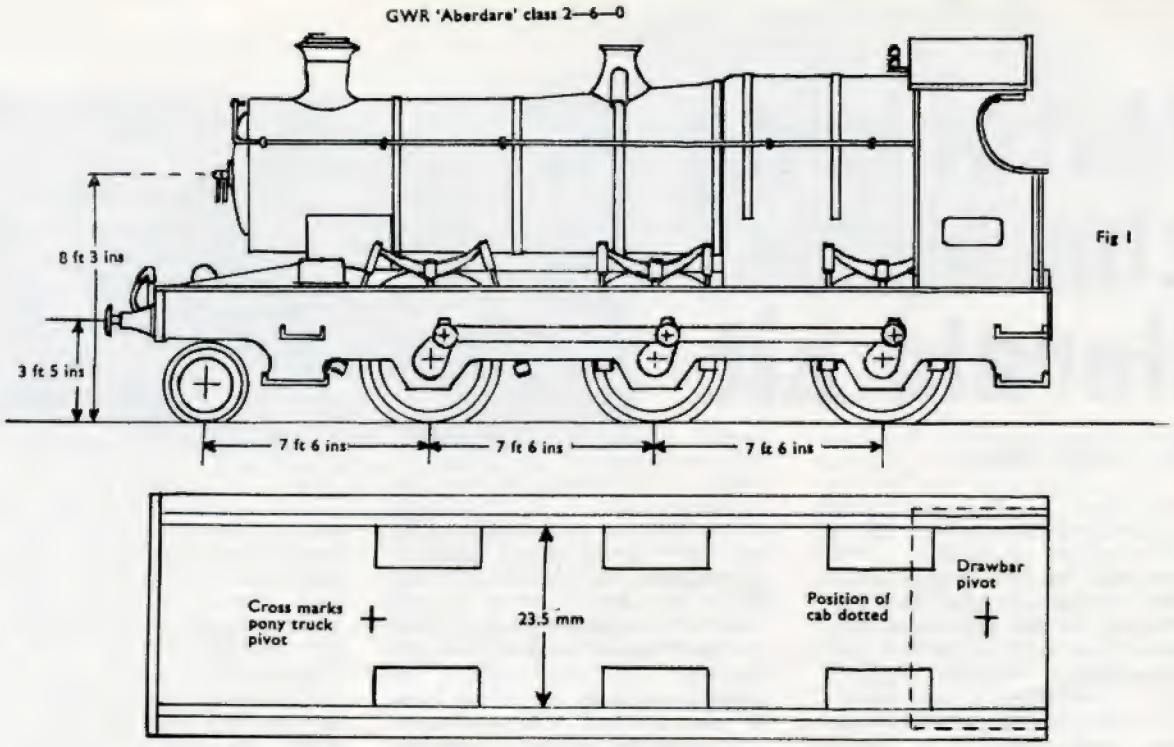


Fig 2
Plan view of chassis showing position of cab and outside frames

Drawing full-size for 4 mm to one foot scale

cemented together and then left to set. When dry it was held in place against the frame by a piece of self adhesive tape and then drilled through from the back of the frame. The coupling rods should then exactly match the axle holes in the frames and there should be no binding when the whole chassis is assembled. The axle holes in the frames were finally opened out with a No 19 drill which I found to be a nice working fit for the *City of Truro's* extended axles.

After cutting to shape the frames can be separated and construction of the chassis can begin. This was a fairly straightforward job, using plastic card. The frames were cemented either side of a strip of 60 thou card, 23.5 mm wide from which square holes had been cut to clear the coupled wheels—fig 2 illustrates this. The wheels should be inserted after the first side is cemented in place and before cementing the second side.

The footplate was cut from 20 thou card and the frame extensions above the footplate from 30 thou. Bracing strips of 60 thou card were cemented between the coupled wheels and at right angles to the frames. The splashers, two sandboxes either side of the footplate near the smokebox, and the footplate steps were made of plastic card of suitable thicknesses. The buffer beam and outside springs came from the *City of Truro* kit. The dome-shaped cover on the front footplate above the front pony truck was shaped from plastic sprue.

The front pony truck was adapted from the rear pony truck of the Prairie Tank kit. It was fitted with the smaller front wheels from the Prairie Tank kit which although under scale for the Prairie are practically scale size for the Aberdare, 2 ft 8 inches. The pony truck was pivoted to a block built up of four or five layers of 60 thou plastic card cemented between the front coupled wheels. The loco/tender coupling bar and pivot came from the *City of Truro* kit and was cemented to a hole drilled in the footplate 8 mm from the rear edge. The outside cranks had their 'D' shaped pins shortened to fit them in the restricted space now available in the coupled wheel extended axles—the extended axles from the tender wheels we are using take up about half of the remaining space. Take care to quarter the cranks accurately when cementing them in place.

The 'Aberdares' and the 'Cities' used the same type 4 boiler so we can use the boiler from the *City of Truro* kit. This should be modified as for the Mogul conversion, that is the depressions on the boiler side which clear the *City of Truro* splashers and nameplates should be filled in witih plastic putty. The handrails should also be removed and replaced by wire and split pins as described in the February issue. On occasions 'Aberdares' have run with 'City' chimneys but normally, and certainly in the latter years of their life, they were fitted with a tapered chimney peculiarly their own. This is not too unlike the K's 43XX chimney which can be adapted by filing away the ridge above the base of the chimney.

A characteristic of the 'Aberdares' was their high pitched boiler in relation to the somewhat low height of the frames. This necessitates building up the height of the smokebox and firebox with plastic card. The cab is pure *City of Truro* heightened at the base witih strips of plastic card. Reference to the drawing, Fig 1, will show what is involved.

After the GWR scrapped 50 ex-ROD Great Central 2-8-0s some of these tenders were used with the 'Aberdares'. Otherwise they used the standard GWR 3,000 gallon tender as described in the June issue. Pre-World War 2 the 'Aberdares' were painted in the standard GWR unlined green livery. Engraved brass number plates are available from most model shops

Motorising the Airfix Herald kit

By Geoff Snell

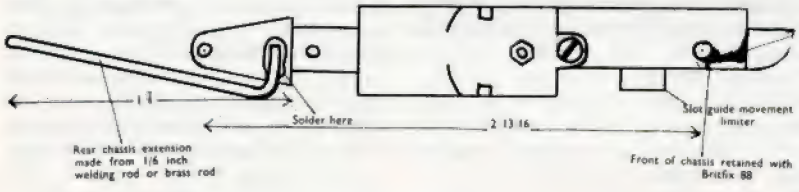
Geoff Snell motorised the Airfix Triumph Herald and took the opportunity of converting it to a coupé in the process.

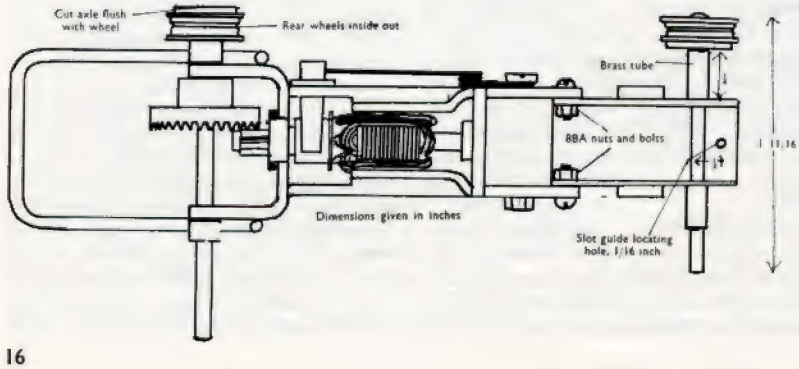
AS my personal transport left the factory as a Triumph Herald coupé and the announcement of the Airfix kit of the Herald Saloon coincided with our slot racing club deciding to run races for cars with a maximum wheelbase of 3 inches (8 ft full-size), this model was a 'must' for me. The model illustrated was converted into a coupé in order to be a replica of my own car but this is not necessary.

Small models require a tractable motor if they are not to be difficult to handle and, for this reason, an MRRC five-pole was decided upon as it is a little easier to handle than the three-pole version. Should one race on a track where maximum speed is the main criterion of performance then it would probably be as well to use a three-pole.

The first step is to solder up the rear chassis extension, as shown in the diagrams. Next, MRRC 7/16 inch wheels were pressed on to the axle 'inside-out' to get the required track and the surplus axle cut off flush with the wheel. The front part of the chassis is made up from sheet brass, the piece soldered to the bottom being to limit the slot guide movement. It is essential that the wheelbase of the chassis is exactly 2 13/16 inches if it is to fit into the body perfectly. If necessary the front chassis should be altered to ensure this.

The front axle is made from 3/32 inch silver steel cut to length. Brass tubing is used to locate the front wheels which are reamed out with a 3/32 inch drill so that they revolve freely on the axle and they are retained by soldering 8BA washers on to the ends of the axle. The easiest way to do this is to place the wheel on the axle then punch a small hole in a piece of paper and place this between the wheel and the washer before soldering the latter into place. This prevents any solder passing the washer and absorbs most of the excess flux so that, once the paper is removed and a little oil applied, the wheel will revolve freely with just the right amount of end float.





One of the advantages of the MRRC slot guide as fitted to the 4WD cars is that the flex can be attached to the braids without soldering, thereby minimising chances of failure of the joint. The method of doing this is to thread the flex through the two rearmost holes and the braid through the two front ones, baring the end of the flex for about 3/8 inches, opening out the braid by pushing a small nail down through it, and then pushing the bared end of the flex into the centre of the braid. The two items can then be pulled into place and a good joint results.

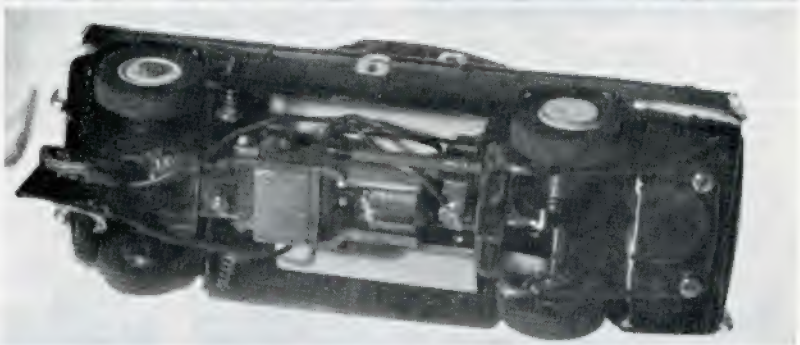
Allow ample flex and then position the slot guide, which should have its pillar reduced to 5/32 inches long, in the 1/16 inch hole in the front of the chassis, and retain it with the nylon collar supplied. After ascertaining the direction of travel, the other ends of the flex should be soldered directly on to the motor brushes and the chassis can be track tested.

Once the chassis is performing properly the body can be fitted. The extreme rear of the body/chassis platform is cut off and stuck into place and the cavity filled in with Humbrol plastic wood. When this is dry, a piece is cut out of the bulkhead to accept the front of the chassis. When a good fit is obtained a 1/16 inch hole is drilled through the bulkhead shelf and

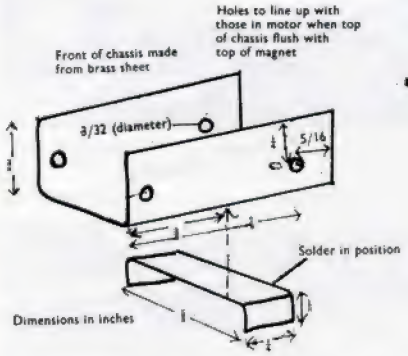
the front chassis and a 10BA bolt put through and fixed to the body with Brifix '88' epoxy resin. The bonnet is then placed on the body to check that the wheels are in the correct position. Should this not be so, the cut-out in the bulkhead must be cut deeper or packed out with polystyrene sheet. When the correct fit is obtained, the front of the chassis supplied in the kit should be cut off and attached with epoxy resin to the front of the chassis you have made.

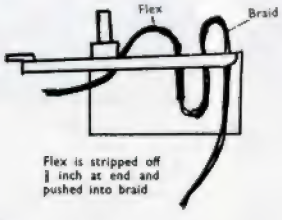
The bonnet should now be temporarily fixed to the body with Sellotape and the front of the chassis, in turn, to this. The whole assembly should be now set aside for at least 48 hours to harden. When this time has elapsed it should be possible to remove the bonnet and leave the chassis front in place.

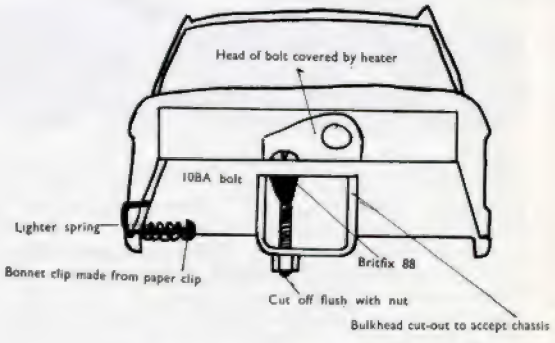
The radiator and grill can now be affixed and the engine made to fit by cutting off the gearbox and sump, making sure that it does not foul the guide retainer. The heater covers up the front body retaining bolt and all the under bonnet parts can be added, the engine being retained by impact adhesive. As there is little point in depicting engine detail if it cannot be seen it is necessary that the bonnet should open. With the bonnet in position small holes are drilled at the top and bottom of the bonnet catch recesses and clamps are made up as in the diagram, these being sufficient to retain the bonnet under racing conditions.

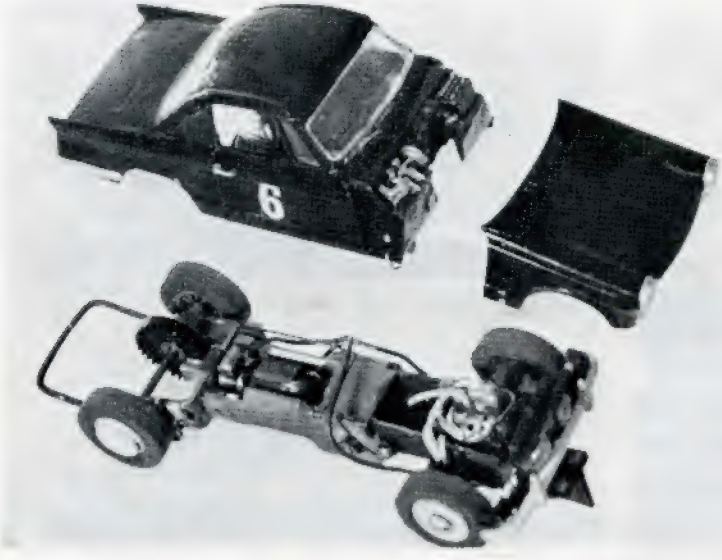


Above: *The actual car shows the coupé styling to advantage.* **Above:** *Underside view shows chassis with body fitted. Note spring clips on bonnet which allow it to be opened.* **Foot of page:** *The finished chassis seen with the modified body. Model can, of course, be left in saloon form.*









The chassis is retained at the rear by drilling holes in the body and plastic wood at the corners of the chassis extension, and inserting self-tapping screws like those that hold the bodies of Airfix racing cars together.

All that now remains is the addition of details, a driver and the painting. In the example shown the driver is the head and shoulders of an Airfix pit figure and is mounted on a piece of polystyrene sheet stuck inside.

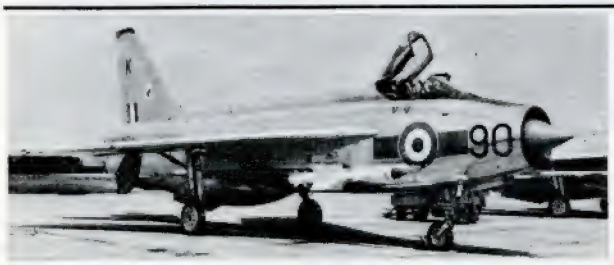
On the track the car has a good turn of speed and, although it does not have steering, its independently turining front wheels give it good handling.

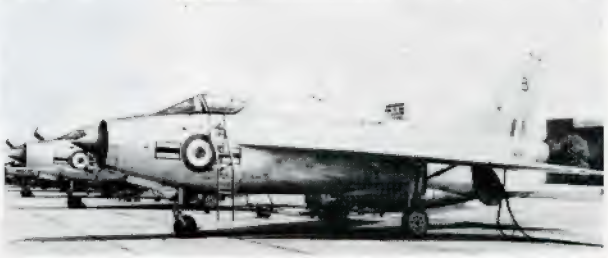
photoPAGE

On June 10, Lightnings of Fighter Command assembled at Wattisham and from there made a fly-past over Buckingham Palace for HM the Queen's Official Birthday. **Michael Bowyer** presents here an exclusive photographic feature of this memorable event, which commenced with an astonishing line-up of 28 Lightning fighters.

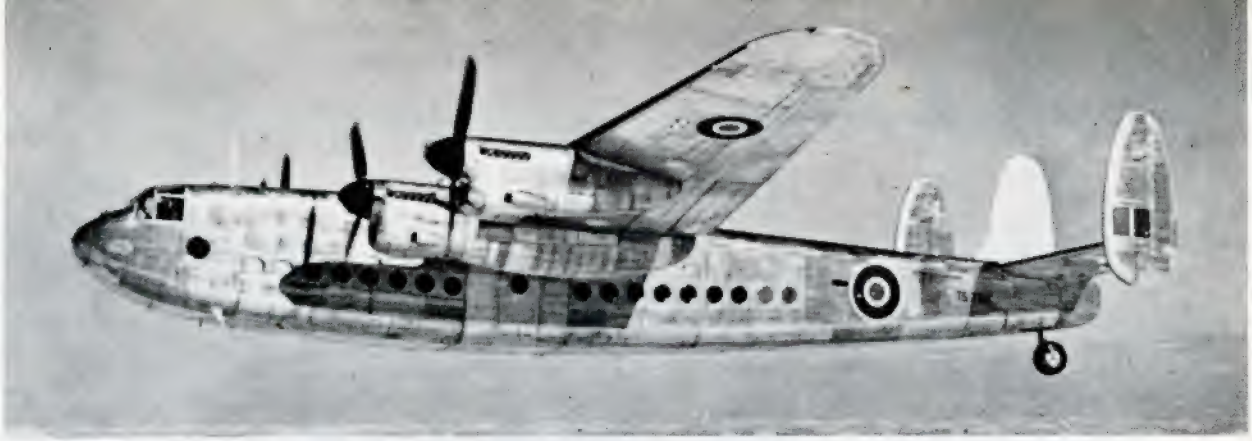
'Photopage' is a regular Airfix magazine feature, and further pictures will be published as available. We would be pleased to consider any contributions from readers, particularly of squadron aircraft or interesting colour schemes, and a free Airfix kit will be awarded for each picture used. Would intending contributors please note, however, that photographs submitted should be private copyright.

Owing to space limitations, it may be necessary to hold pictures for a few months before publication. To ensure safe return, please write your name and address on the back of each print. We cannot use press cuttings.





Above: *XP705:K of No 23 Sqn, with an interesting nose number, and XS417:Z, Lightning T5 of No 23 Sqn.* **Below:** *XS926:B, Lightning 6 of No 5 Sqn, with others of Nos 5 and 23 behind.* **Bottom:** *XS903 taxying out a Wattisham, A of 5 Sqn. Note large belly tank on the Mk 6s.* **Right, top to bottom:** *Lightning 1, XM136:B of Station Flight, with yellow and black nose striping. Third production Lightning. Lightning T5, XV328:Z of No 29 Sqn, newly formed at Wattisham. Part of the impressive line-up, with 29 Sqn nearest, then Station Flight and 111 Squadron. Lightning 3, 0 of 23 Sqn, landing (XP752). Another Mk 3, XP765:A of 29 Sqn, landing.*



York from a Lancaster

ALAN W. HALL WITH A MUCH-REQUESTED MODEL PROJECT

MAKING a York from a Lancaster is one of those classic exercises which almost all modellers would like to try. It is a relatively easy project but one which can make a mess of the kitchen if you are restricted to table top model making. In a word it is simply putting a new fuselage on to the Lancaster wings and tail unit.

For the straightforward, non-gimmick minded modeller, I have left this conversion from Lancaster to York without such features as fuselage windows, opening freight doors and hollowed out fuselage. If needs be a great deal of extra work can be done on the York fuselage but this is for the really advanced modeller, and beginners are advised to steer well clear of trying to let-in cabin windows made from perspex and cutting out fuselage doors . . . it can result in many hours hard work and not a little loss of temper.

The snags to watch for are, without doubt, the joints between the balsa wood fuselage and the wings and tail unit. Without care and patience with these, the model will look less than perfect as the wing joints can be seen from all angles and a considerable amount of time and patience must be spent sanding and filling these parts before the application of paint. The fuselage itself will also need some patient sanding and filling. Silver paint shows up the smallest amount of grain left in the wood—so take care.

Reference on the York for details of camouflage patterns or colour schemes is available in plenty. The recent York Profile gives a great deal of information but so does *Aircraft of the Fighting Powers*, Vol 5. Similarly magazines such as *Flight* and *Aeroplane* at the time of the Berlin airlift gave many photographs of squadron markings. Finally there are two examples still in existence that can be inspected and photographed. They are kept by the Air Scouts at Lasham and in the Skyfame museum at Staverton, respectively.

Below: *First stage in cutting out the fuselage from balsa. Faintly visible in the picture are transverse pencil lines which act as guides for obtaining correct fuselage cross-section. Picture in next column shows it after shaping.*

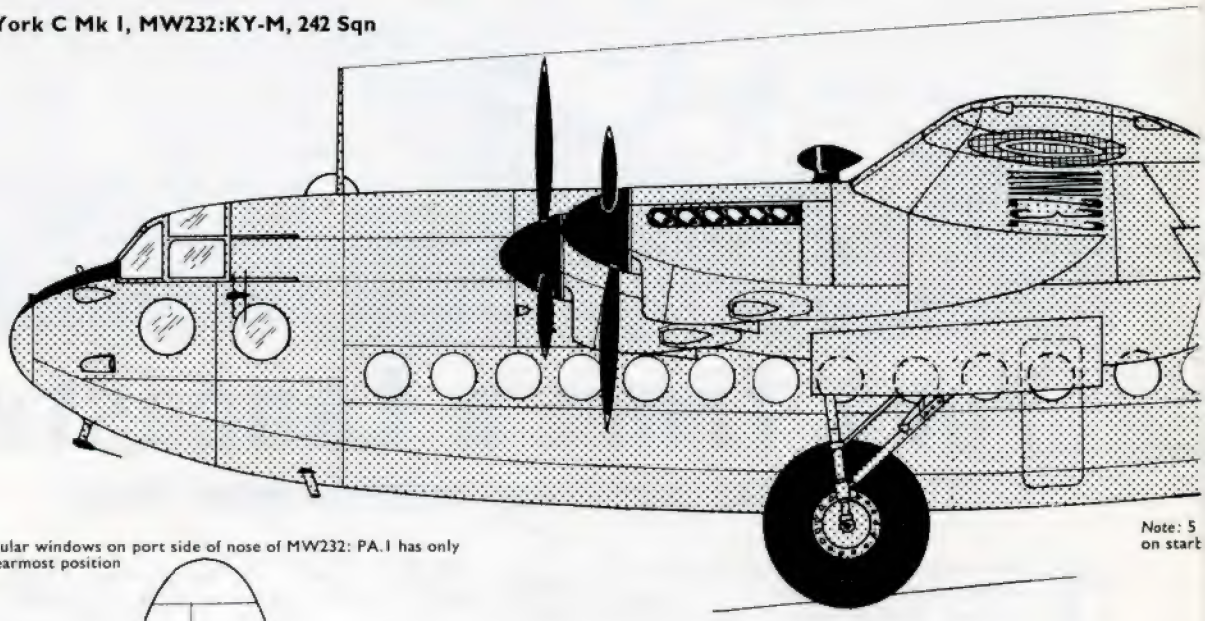
STAGE 1 Cutting out the fuselage. Obtain a piece of balsa 13 inches long by 1¾ inches deep and 1½ inches wide. More than likely your model shop will not be able to supply this size exactly and you will have to purchase a larger piece. In my own case I was able to cut out two fuselages from one 6s block. I cut the rough squared up shape out of the solid using a Bridges power saw but this may not be practicable for all model makers and they will have to revert to a tenon saw to do the task.

STAGE 2 Fuselage shaping. On the block I drew a centre line and marked off one inch lines at right angles before drawing on the plan view. This was then cut out with the fret saw. The side elevation was traced from the scale plan on page 20 and actually cut out in paper and Sellotaped on to the wood. This is easier to follow than a pencil line and one can tell instantly if a deviation from the correct shape is being made. Accuracy at this stage will pay off admirably all along the line.

STAGE 3 Construction of the wings can take place at any time during the early fuselage work. I added the engines and undercarriage but not the props, wheels or undercarriage doors at this stage as they would have got in the way during the rest of the finishing. The only modifications required are the removal of the engine flame dampers and the substitution of open exhaust manifolds. These can come from your scrap-box; mine belonged at one time to a Stormovick.

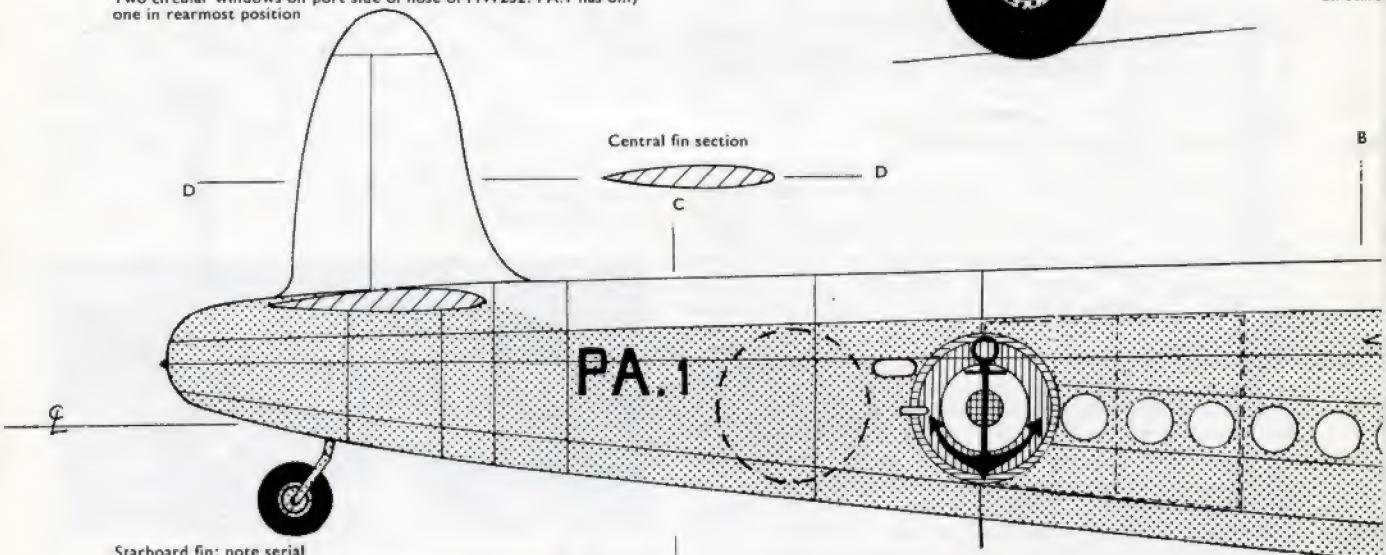
Instructions continued on page 23
Scale drawings on next page

Avro York C Mk 1, MW232:KY-M, 242 Sqn

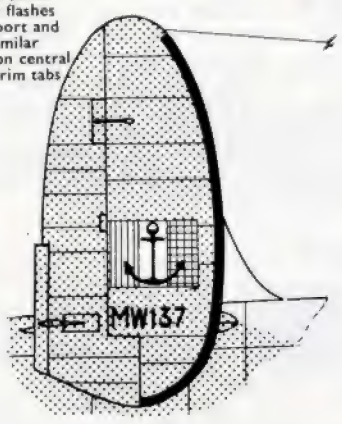


Two circular windows on port side of nose of MW232: PA.1 has only one in rearmost position

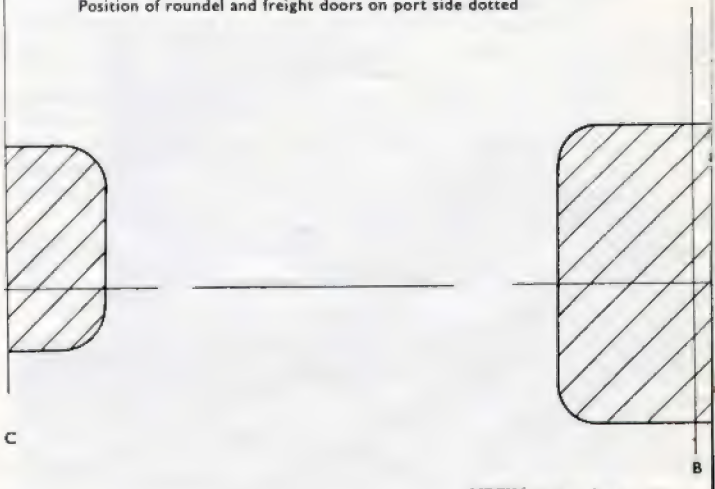
Note: 5 on starb



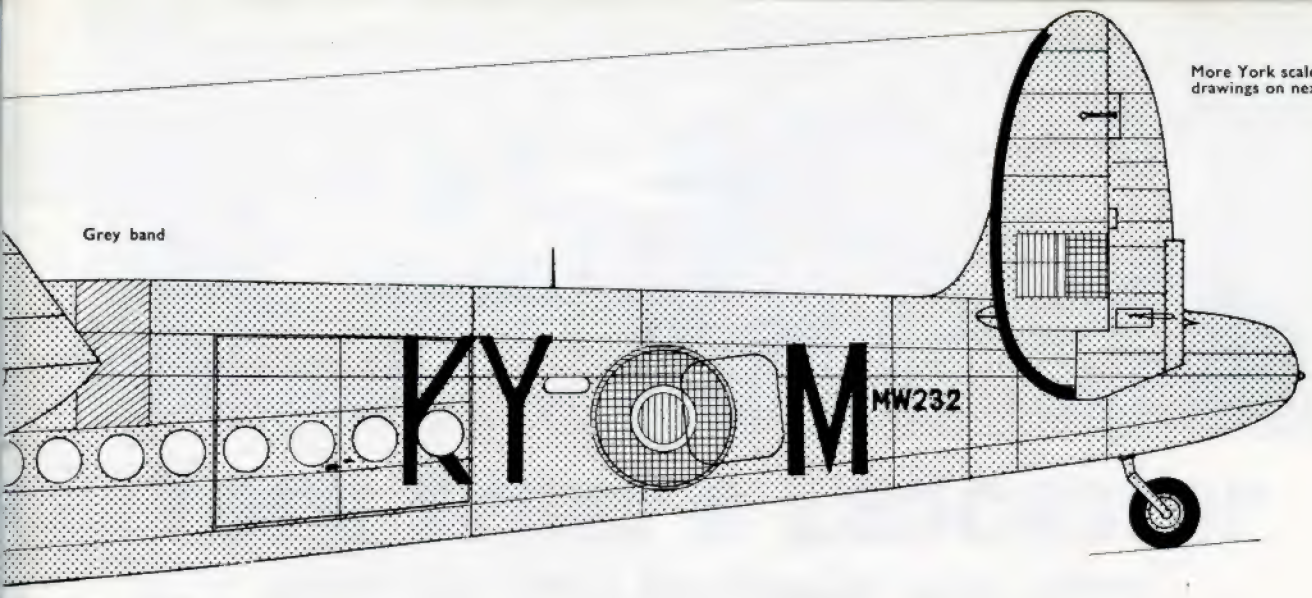
Starboard fin: note serial under fin flash. Fin flashes on inside faces of port and starboard fins in similar positions but not on central fin. Note revised trim tabs on rudders



Position of roundel and freight doors on port side dotted

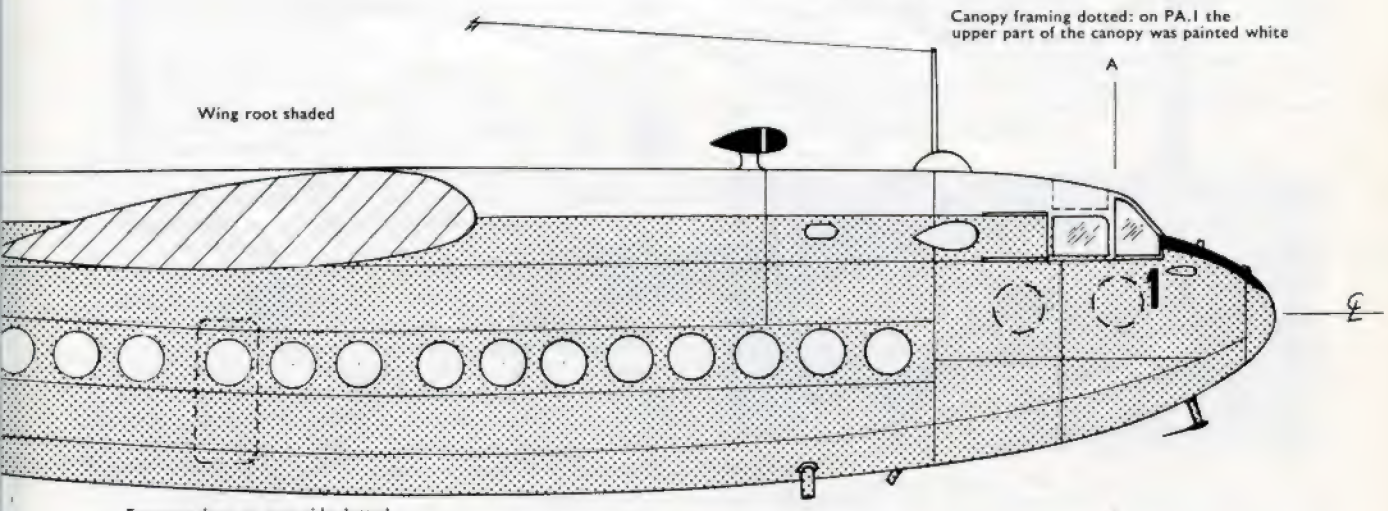


More York scale drawings on next page



windows aft of wing trailing edge
oard side and 6 on port side

York PA.1 (MW137), Aeronavale, based at Le Bourget, circa 1957-61 with PA.2 and PA.3



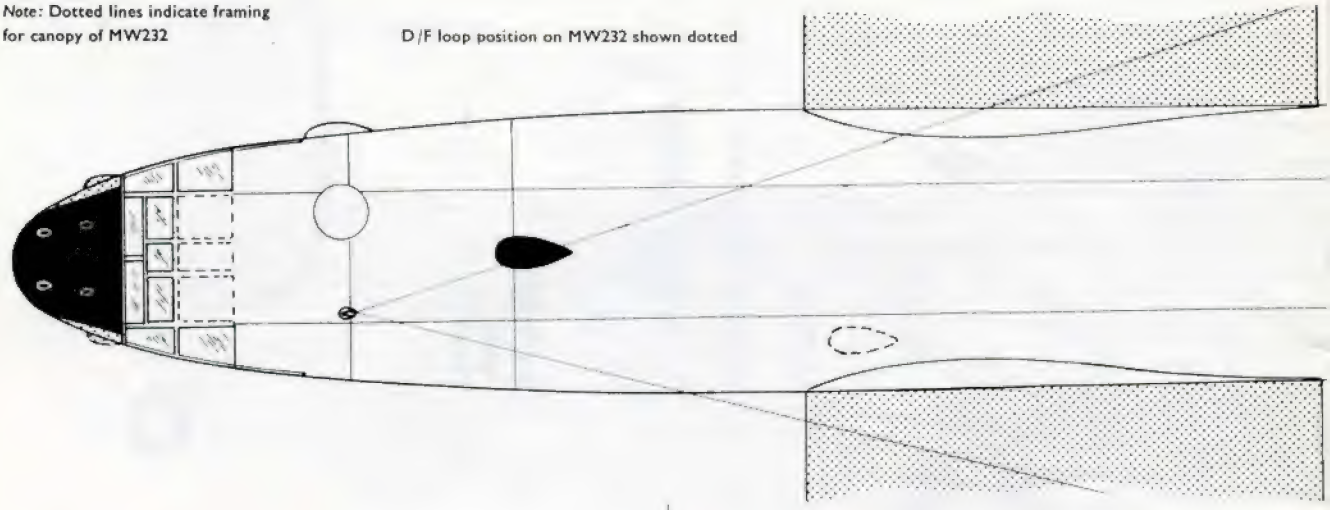
Entrance door on port side dotted

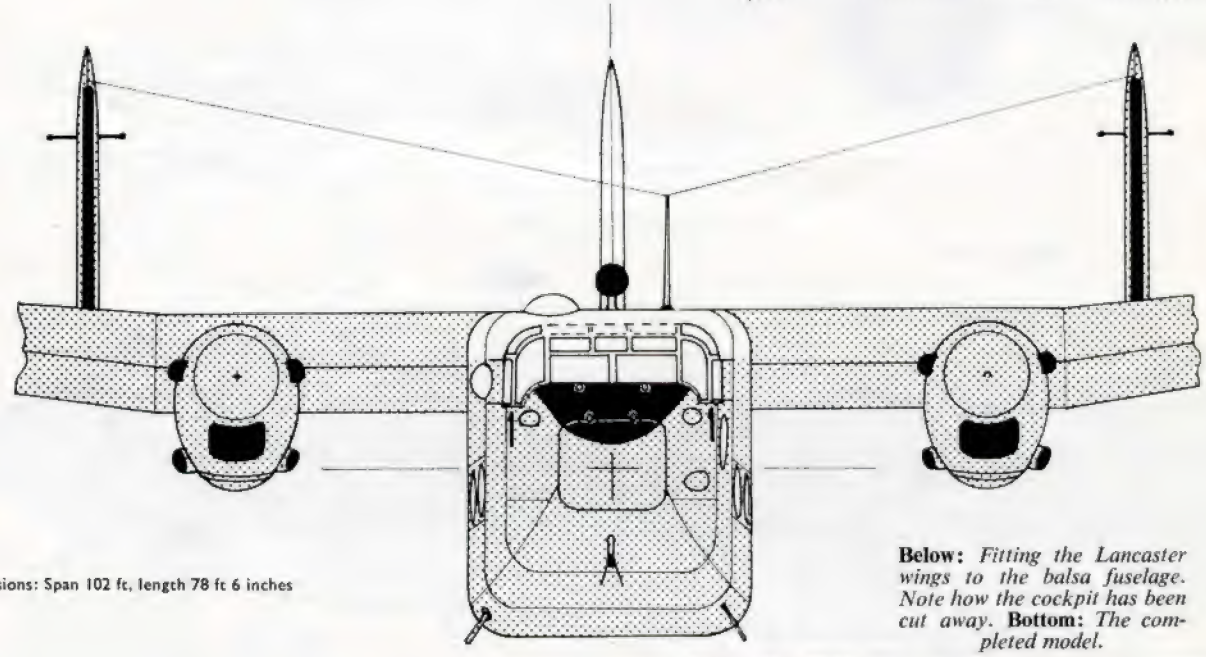
1:72 scale

Drawings by Richard L. Ward A

Note: Dotted lines indicate framing for canopy of MW232

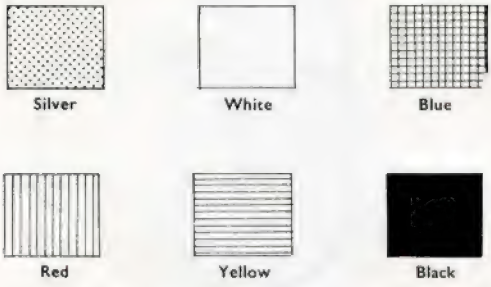
D/F loop position on MW232 shown dotted





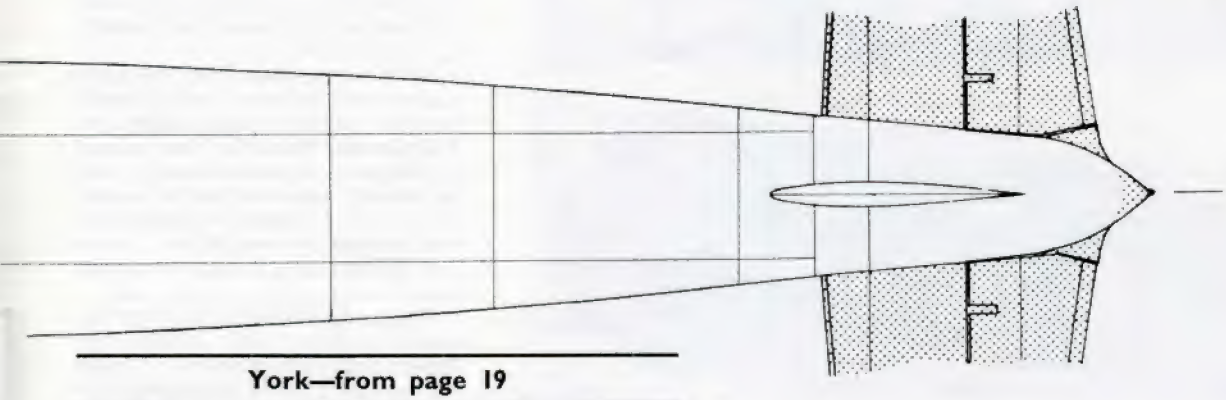
Dimensions: Span 102 ft, length 78 ft 6 inches

Below: *Fitting the Lancaster wings to the balsa fuselage. Note how the cockpit has been cut away.* **Bottom:** *The completed model.*



Note: Shades for French roundels lighter than RAF shades

Spinners silver for PA.I, black for MW232
Propellers: Black with 4 inch yellow tips



York—from page 19

STAGE 4 The fuselage is shaped according to the templates given on the plan. Although simple to sand into shape it is advisable to cut out the template shapes in card (by tracing them) to ensure an accurate curve to the otherwise box shaped fuselage sides. If this is inaccurate the result will jar considerably, and around the wing roots and tailplane joints must be very carefully done.

STAGE 5 According to taste the fuselage can be filled and sanded at this stage or, as I preferred, left in its roughly sanded shape to have the wings fitted. By roughly sanded I mean that the fuselage was to all intents and purposes finished apart from filling and polishing. With the use of dividers and centre lines drawn on the fuselage the position of the wing tabs was accurately plotted and then drilled out using a small power tool which is readily available on the model market. If done correctly the wing will fit at the correct angle to the fuselage with the upper surface flush with the top of the fuselage line. The gap left, due to the curved side of the fuselage, is filled with body filler and allowed to dry thoroughly. I used polystyrene cement for the joint quite satisfactorily.

STAGE 6 The tail unit is treated in a similar fashion. Here, however, there is a minor change as in some cases, notably the French aircraft shown in the plan, the fin and rudder assembly needs modification. This can be done by cutting out the rudder and replacing it with a new one made from balsa. The central fin is also cut from balsa, sanded and fitted in place by leaving a tab on the bottom which is recessed into the fuselage. Any small gaps left over from these operations require filling. Body putty is used for the major gaps and a mixture of talcum powder and clear dope for the smaller ones.

STAGE 7 Before continuing with the fuselage the cockpit area is cut out very carefully and laid on one side in preparation for canopy moulding. The fuselage and all wing and tail joints are then given a thick coating of powder and dope filler before being allowed to dry and polished. It is advisable to give three coats at least, polishing down each time with very fine sandpaper in order to get the fuselage perfectly smooth. The mixture can be thinned each time until the final coat is more dope than powder. The job will take a long time and require a lot of patience but it must be done if perfection is desired.

STAGE 8 The canopy can be moulded in between these operations and, after they have been completed, the wheels, props, tailwheel and other bits and pieces such as radio aerials and so on can be added. The cockpit area is either hollowed out and detail added, or painted black and the canopy fixed in position. More than likely another session of filler and sandpaper will be needed on the canopy joint lines as these must not be seen in the finished model. Details of canopy moulding can be found in last month's issue. Whip aerials were made from an old nylon toothbrush bristles, larger masts came from stretched polystyrene stem and the dipole aerial under the nose was made from a small section of plastic card with fusewire and a dob of body putty for the joint. The D/F loop came from the scrap-box. Astrodomes on fuselage sides and on the roof were made from acetate sheet and moulded in the accepted manner or, if you are lucky, can be made from adapted items already in existence. The teardrop shaped transparency on the starboard fuselage side has to be made up as the one in the Lancaster kit is, in my opinion, too small.

PAINTING AND FINISHING There are many schemes that can be applied to the York and we have given two interesting examples here. Markings for the French aircraft were difficult to obtain and had eventually to be hand painted. RAF versions are comparatively simple and ABT or HisAirDec transfer sheets will supply all the serials, roundels and codes needed. Fuselage portholes were cut or punched from strips of black transfer sheet and applied after painting. Use a large brush of top quality when painting silver. This is one of the larger models needing this treatment and care will have to be taken to get the paint on smoothly. Mix the colour well before application and complete the job as quickly as possible. If the silver is thinned slightly and two coats applied in the manner described a better finish will result.

Below: *Fitting the canopy; moulds are seen in foreground.*

Top: *British signallers of the Zulu War period showing (from left) the heliograph and operator, message taker, signals officer, and semaphore team. Men are in shirt-sleeves.* **Above:** *Wagon Train figures used as Natal settlers and an ox-drawn wagon from Wagon Train components and balsa.*

Settings for the Zulu War

THIRD AND LAST PART OF C. JONES' ARTICLE

THE Zulu War of 1879 arose from the situation of the most powerful black nation coming into contact with the rapidly expanding states of the European colonists of South Africa. Naturally, border incidents occurred, and cattle-raids by both sides were commonplace. A fear of the tremendous Zulu military power grew. Finally the British administrators of Natal presented Cetshwayo, King of the Zulus, with an ultimatum. The illiterate fellow did not grasp the gravity of it, and so failed to comply with it. Therefore, in January, 1879, three columns under Lord Chelmsford entered Zululand.

The central column under Chelmsford himself was fooled into dividing its strength. Half was destroyed at Isandhlwana, a bloody massacre. Obviously, the other half had to retreat smartly into Natal, and to prepare a defence. A company of the 24th were surrounded at Rorke's Drift, trapped in a depot behind the column. They beat off innumerable rushes in a glorious defence, subsequently to join the main column as it passed by.

The right flank column, under Colonel Pearson, having successfully fought off a large impi at Gingindhlovu was cut off at Eshowe. Seeing that he too was trapped, and a seige was evident, he rapidly fortified the outpost and prepared his defence.

The able Colonel Evelyn Wood commanded the left flank column. After pushing far into northern Zululand, he was obliged to make a base at Kambula by the threat of being cut off. So with the three columns shut up, the Zulu position was very strong. When Wood learned that a large impi was using the flat top of a table-top mountain as a training ground, he planned a daring attack. The result was the exciting night battle over the top and down the sides of inHlobane mountain. Despite this defeat, the Zulu impi followed up the Europeans as they retired at dawn and hotly attacked their entrenched position at Kambula. The outcome was a major Zulu repulse.

British signaller and heliograph, Zulu War period.

With his reputation and future in danger, Chelmsford planned a second invasion. Shocked by the disaster of Isandhlwana, Britain at last granted the troops he requested. Marching near to Pearson's original route, he beat the beseiging Zulu impi at Gingindhlovu, and relieved Eshowe, where Pearson had gallantly been holding out for two months.

Returning to Natal, Chelmsford then re-led his forces into Zululand but further north, and joining with Wood's column (the 'Flying Column' as it was known) pressed on to Ulundi, the capital, Cetshwayo's Kraal. There were several minor skirmishes on the way, but the war was decided before Ulundi, where at last the Zulu military power was broken. Ulundi was fired, and shortly afterwards Cetshwayo was captured by troopers of the KDG. The war was over.

The British means of defence was to construct a 'laager', by connecting the trek wagons of the commissariat together, forming a stockade around the camp, and digging a trench outside the laager. This was the easiest and safest way of beating back the Zulu hordes. Sorties were possible and were often carried out to great effect. Ulundi was an exception; Chelmsford wanted to show the Zulus and his critics at home that the British soldier didn't have to hide behind a laager to defeat the Zulus. Here the columns formed a square, cavalry and wagons in the middle, infantry four ranks deep forming the perimeter (the front two ranks knelt). As in all the battles the artillery was placed at the corners of the position. When the enemy started to retreat, one side of the square opened up, and the cavalry smashed into the fleeing warriors. InHlobane, a running battle, and Gingindhlovu, a battle of encounter, were also exceptions. These notes should help the enterprising layout modeller.

The vast amount of provisions and supplies required to follow the army

was carried in trek wagons, the characteristic form of transport of the South African pioneers. The Airfix Wagon Train set is utilised. The front axle has the yoke-pole or 'disselboom' cut off, and the projections to the front of the axle are removed. The back axle is cut down till it consists of but a single shaft, with two upright supports. From balsa sheet, a beam is cut to lead forward (visible in the picture) and cemented centrally to the axle. A piece of the original disselboom is cut to 18 mm in length, and jointed to the rear of the front axle, also jointed to the beam on the back, using a piece of pin stuck through both in each case.

The wagon bed (floor) is cut from balsa sheet, measuring 65 mm × 20 mm. A locating hole for the peg on the front axle is cut centrally 10 mm from the front end, and the peg fitted in, while the supports of the back axle are cemented 15 mm from the rear. The brake is cemented just behind the back set of wheels. The body work varied, sometimes the bed alone was used, but usually the wagon had low sides. These too are of balsa, being about 6 mm high. Occasionally an awning on curved loops was rigged up to the rear. To represent this, a piece of the awning of the original wagon measuring about 20 mm long should be added to the back. The first pair of oxen, for these were the beasts of burden used, were attached to a short (35 mm) disselboom, which should be made from scrap plastic. A span of 18 oxen was usual, but difficult country doubled this, and mountain passes needed a span of 40 per wagon. The only source of oxen is the bull or suitably modified cows from the Airfix farm animal set. The wagons will be required by modellers depicting the camp at Kambula, for example; or those contained in the squares at Gingindhlovu and Ulundi even if you leave the oxen out altogether. Though of extremely sturdy construction (they had to be) they could be completely dismantled if an obstacle which could not be negotiated by the oxen was encountered. During the war, over 2,500 wagons were employed in the British train.

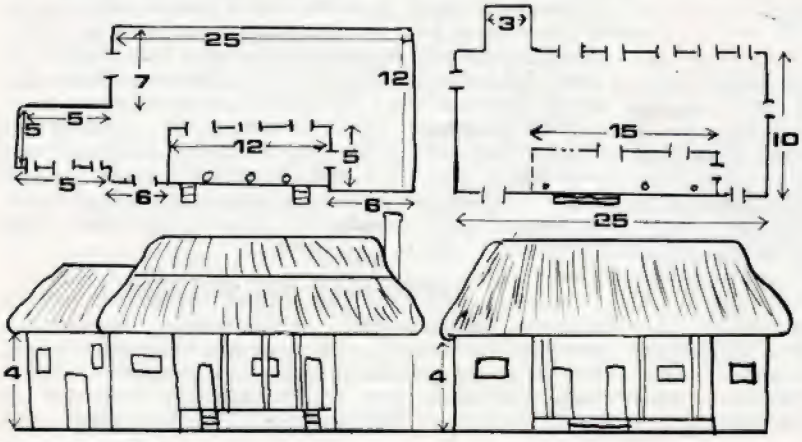
Above: *The storehouse at Rorke's Drift made from balsa and with real hay thatching—which still required trimming when photographed.* **Foot of page:** *Constructional sketches of the Rorke's Drift storehouse (left) and hospital (right) showing main dimensions in inches.*

In laager, the disselboom of each wagon was locked under the bed of the next, forming a closed chain. The space under the bed was filled in with biscuit boxes and mealie bags, the latter of which were also heaped up on the side to form parapets.

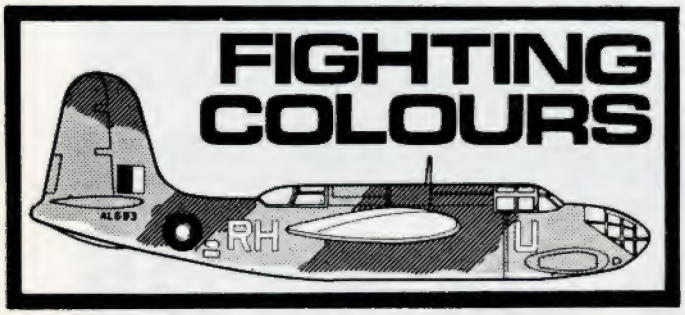
As the Zulus carried out all their manoeuvres at the trot, and were very good at ambushing troops, it was expedient to have a good communication service. So apart from the dashing despatch riders, a modeller may be interested in constructing a signals unit. Signalling was done either by reflecting the sun's rays by heliograph (morse) or with flags (semaphore, the less used system). For the heliograph the tripod was built from slivers of balsa, or plastic scrap, each 15 mm long, the mirror and shutter from discs of card, with an approximate diameter of 3 mm. The flags are made from rectangles of paper, 4×5 mm glued to slivers of balsa or plastic. The signals crew come, of course, from the 1914 German set. The figures with their arms above their heads become semaphore men (arm positions can be changed), and the stretcher bearers with arm modifications plus the kneeling machine gunners are used to operate the reflector. The machine gunner with the ammunition box fills the place of a signaller noting down the messages received, if the belt is cut from his left hand and replaced by a square of paper to represent a pad. A prone figure (firing), with his rifle replaced by about 8 mm of pin for a telescope, becomes an observer. (Note that the telescope has a support 3 mm from the end.) Binoculars can also be used, and can be cut with the arms from the officer.

To add to the authenticity of the scene, the signallers can be modelled in shirt-sleeves and field service caps. The latter were similar to the glengarry cap. For the former, remove all detail from the chest and back, and carefully cut away the tunic skirting all round. For the rolled up sleeves, a ridge must be cut with a file just above the elbow, and the arm below this must be thinned down. The leg conversions for anklets are the same as described previously. Soldiers in shirt-sleeves can also be used for detachments on fatigues, with spades and picks from scrap plastic. Cooks and medical orderlies can also be represented this way. The British army shirt at this time was light grey.

Though inHlobane and Ulundi present exciting challenges to the modeller, I suspect that the interest of many will be focused on the epic defence of Rorke's Drift. For that reason, both of the main building plans, plus side elevations have been included. The necessary construction, using balsa sheet for the walls and balsa rod (square cross-section) for the roof framework, is within the capabilities of most experienced modellers. Both the hospital and the storehouse were thatched with straw (use the real thing if you can)



Continued on page 35



Part 1: Fighters 1937-39

FEW topics arouse as much interest amongst enthusiasts as aircraft colouring and markings. Answering needs of model makers and others Fighting Colours has been compiled. Such a complex topic is best presented in sections controlled by time and place, and for the benefit of our younger readers we shall be treating the topic in a basic manner in each section before presenting items for the more knowledgable.

Camouflage experiments commenced in 1914, but it was 1916 before means of disguising the presence of aircraft—as much in the air as on the ground—came into general use. Thus the upper surfaces of military aircraft are usually painted in dark shades whilst under surfaces are light in colour. A dark green finish was originally prescribed. In reality, and in answer to local needs, it ranged through tones to a greenish shade of khaki, for application to upper surfaces and sides. Under surfaces were left in the natural fabric 'creamy' colour. For better concealment metal parts were painted black and grey. Some night-fighting machines had an overall green finish. Such colours were general until the end of World War I and well beyond the close of hostilities, on British fighters.

From 1919 a clear varnish finish came into common use, soon to be overtaken by aluminium dope applied to all surfaces over a special dull-red primer. Engines were black, or left in natural finish. Parts of cowlings were often polished bare metal, likewise metal panels close by. The need for camouflage gone, RAF aeroplanes fell in line with public gaiety. In 1923 camouflage returned to the 'silver' bombers but it was the start of 1937 when the RAF decided that future fighters would be camouflaged.

Rapid deterioration in international relations made conflict almost a certainty. When the aircraft ordered under the Expansion Schemes appeared they did so wearing camouflage.

THE EARLY HURRICANES

The first camouflaged production machine was L1547, first flown on October 12, 1937, and used as a trials aircraft. L1548 was delivered to the RAF on December 15, 1937, becoming its first camouflaged fighter, and was taken on charge by 111 Sqn with whom it was still serving when the war commenced. L1549-L1552 were at Northolt by the end of the year.

From the start the Hurricanes wore matt dark earth (brown) and dark green paintwork, applied to a specific pattern. Two versions were decided upon, Schemes 'A' and 'B'. The second was the mirror image in pattern of the other, and these were applied alternately to the aircraft, so that L1547 had the 'A' Scheme and L1548 'B', etc. This system was continued well into the war years. Under surfaces, painted silver, were defined as those beneath wings and tail and, in the case of the fuselage, that part 'the tangent of which makes an angle of not more than 60 degrees with the horizontal'. Planned patterns were

Top: *Demon K1954 of 23 Sqn, subject of the profile view. It had 23 Sqn checks above the mainplane stretching between the upper wing roundels* (MOD photograph). **Above:** *Gauntlets of No 19 Sqn lined up in 1935. K4095 carries light blue and white checks on fin, fuselage and mainplane.*

most carefully adhered to, very detailed GA drawings being issued, and patterns were chalked on the aircraft. The wooden propellers were varnished brown.

To render the RAF roundels clearly visible in peace-time a yellow surround was added to the usual Type A (or blue-white-red) roundel. Officially this new type was called Type A.1 (Matt). On the fuselage sides the Hurricanes had 35 inch diameter A.1 (Matt) roundels. Above the wings they were 4 ft 3 in across, and situated in the standard position 1/6 of the wing span inward of each wing tip. The size of roundels was regulated by the instruction that 'they should be as large as possible, of one of the prescribed sizes, and not overlap control surfaces'. Each ring of the roundel equalled in width the diameter of the centre red disc. Tail/rudder national markings were now discarded.

By March, 1938, No 111 Sqn at Northolt had added an 8 inch squadron crest to the Hurricanes' fins. A few aircraft then acquired the light blue number '111' 18 inches high aft of the roundel. Later variations of this included '111' with the top half of the number dark blue or red. Another version, possibly the earliest, was the application of '111' in yellow only.

Above the wings were the 4 ft 3 inch roundels centred 6 ft 8 inches in from the tips. On the under surfaces, Type A roundels were painted quarter of the span from the wing tip and 3 ft 9 inches in diameter. Black serials were 6 inches high on the fuselage and 2 ft 6 inches high under the wings.

With the deletion of squadron markings a need for unit identification was officially recognised, One accepted method was the painting of a white spearhead pointing forward. No 56 Sqn adopted this on its Hurricanes, and painted a white 6 inch individual aircraft letter beneath the exhaust stack. L1593 was 'C' and L1599 'L'.

CAMOUFLAGE FOR BIPLANES

Almost simultaneous with the first Hurricane deliveries was the order to camouflage all home-based front-line fighters. It took several months to achieve. A motley collection in green-brown-silver finish emerged from the sheds shorn of squadron colours, often with serials over-painted, and retaining

Type A roundels. Some squadrons may have applied numbers to their biplanes, but it seems unlikely. What is certain is that it was a lengthy process embracing hosts of anomalies, judging from the aircraft that I observed. The best known of the camouflaged biplanes are probably the Furies of Nos 1 and 43 Squadrons.

In September, 1938, a new camouflage feature appeared, when the decision to paint the under surfaces of fighters black and white was implemented. Although the order specified black under surfaces to port wings and white to starboard there were many variations even to this simple theme, brought about by supply shortages perhaps. Several squadrons for sure painted their aircraft in a manner the reverse of that specified. Illustrated is a Spitfire of 19 Sqn photographed about February, 1939, wearing white (starboard) and silver (port) under surfaces whereon the serial remains and the roundel has been painted out—both typical anomalies of the period. There was confustion, too, as to where the two colours met, sometimes this being on the fuselage centre line, sometimes at a wing root. Usually Hurricanes had all-black or all-white tailplane under surfaces. Many aircraft had their starboard under-wing roundel merely painted out in a dark colour, leaving this and the serial still visible. The removal of serials was usual, and to the outbreak of war many aircraft did not carry them, or, if they did, then it was a small replica on the fin or perhaps the 'last two'—as on Hurricane NQ-G which had '34' about one inch high in white on its fin tips. A feature of factory produced aircraft was the 'silver' panelling beneath the nose on Hurricanes and Spitfires which terminated at the mainplane.

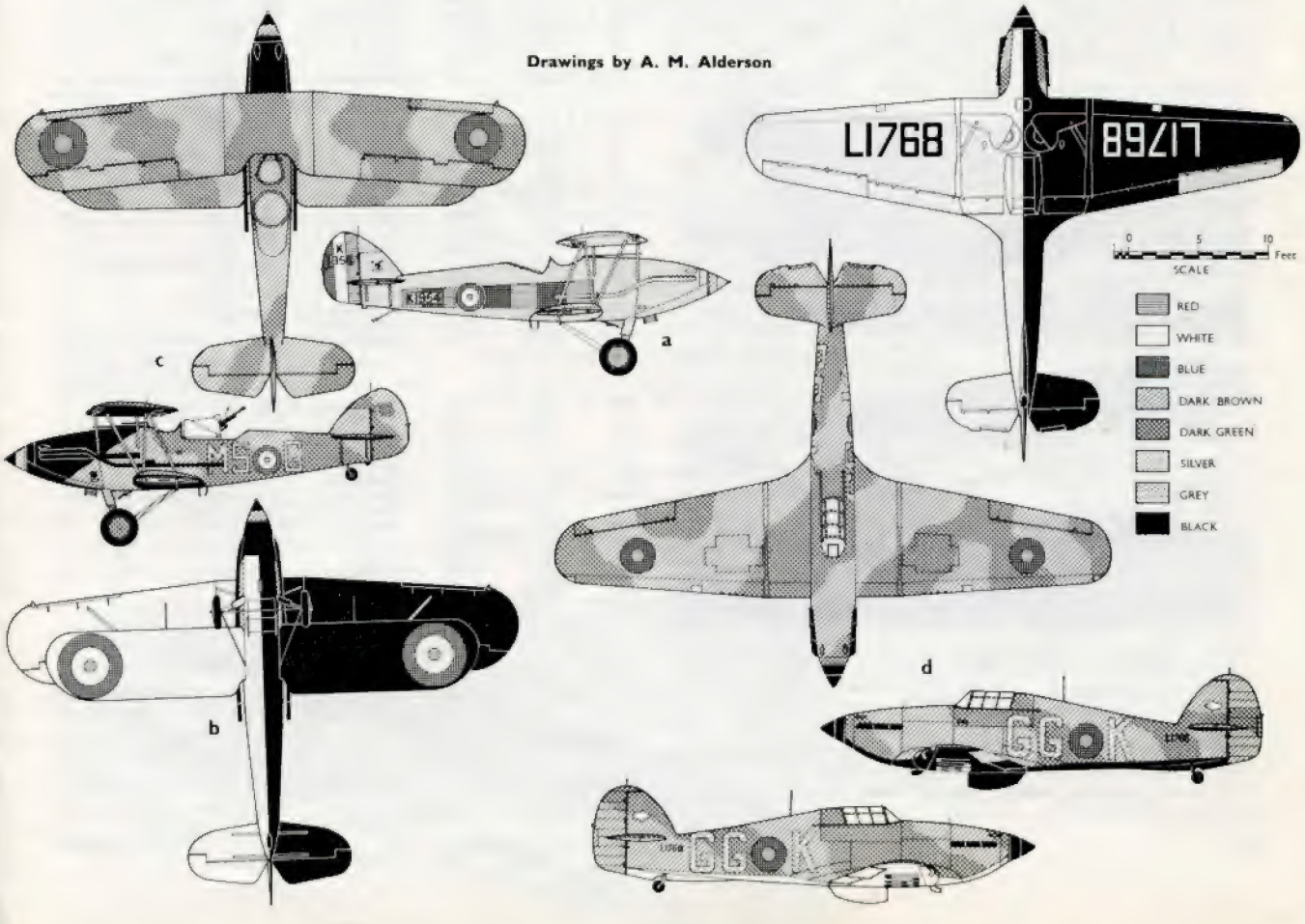
In the winter of 1938-39 outer yellow surrounds to roundels were deleted and the roundels either left without the outer ring, or were enlarged to cover the same area as before—but this was rarely seen.

Key to drawings: *(A) Hawker Demon K1954, one of a batch of six (K1950-1955) of 'Hart Fighters' delivered in July, 1931, to No 23 Sqn, remained with the squadron until the end of 1936. It wears typical pre-war squadron colours. Cowling panels were of burnished metal. 23 Squadron's eagle emblem was in red on the fin, exhaust pipes were a dull fawn colour. (B) Under-view of K5698 wearing split black/white camouflage in 1938. (C) Hawker Turret-Demon K5698 in early 1939 markings, which entirely replaced the previous markings of its owners, No 23 Squadron. An unusual feature—one of the anomalies referred to—is the black nose panelling. '98' was chalked on the fin of the machine. Gunner's shield had silver segments; cockpit interior was light green and black. (D) Hurricane I L1768 was initially delivered in January, 1939, to No 151 Squadron in whose markings it is depicted.*

THE IDES OF MARCH

Further deterioration in international affairs led, in March, 1939, to the appearance of two major changes in markings. It was decided that red and blue roundels (officially called Type B, in which the centre red disc was 2/5 of the total diameter) should now become standard on fuselages and wings of fighter aircraft. On those in service, the existing roundels were further painted to meet the new requirements, but on aircraft now leaving the factories the roundels were much smaller, usually of 25 or 30 inch total diameter. All traces of under-wing serials and roundels were now removed, and often the aircraft bore

Continued on next page



no traces of any serial number for security reasons.

The second feature which, at the time, aroused much interest amongst the handful of enthusiasts of those days—and doubtless across the North Sea—was the introduction of squadron 'code letters' or, more officially, unit identification letters, for signalling and in-flight unit identification reasons, which were to remain to the 1960s in one form or another. These letters were applied in a mid-grey paint usually (bearing in mind that the individual's idea of mid-grey can vary a lot, verging on dark grey at Duxford and light grey, very light indeed, at Kenley!). Most, if not all units, applied the unit identity letters (two) ahead of the roundel on the port fuselage side and aft on the starboard. The aircraft's identity letter was positioned on the other side. It was not possible to tie up the individual aircraft with squadron codes initially, thus it was not immediately possible to relate the 'codes' to likely owners. But since the squadrons did not move stations at the same time it left little to the imagination to associate unit and coding. In any case, air-to-air identification was the main reason for the lettering.

By the time codes were added the entire fighter force had certainly become camouflaged, albeit in mixed manner, but in the summer of 1939 the dark green and dark earth aircraft were seen to be correctly coloured with black and white under surfaces, the colours meeting along the centre line on more and more aircraft. The alternative scheme for factory built aircraft introduced silver under the nose and, on some, under the rear fusealage.

The odd-man-out always characterises the markings schemes, and it is interesting to muse over the likely reason (an error in signalling, or typing perhaps) that caused some of the Spitfires of No 66 Sqn at Duxford to be coded MB initially instead of RB.

Top: *Demon K5698, subject of the three-view drawing, photographed in 1939 shortly before Blenheim fighters took over completely on the unit.* **Above:** *An interesting break-away in markings is depicted here on a Demon used as a target-tower. K2857 was painted yellow overall, and had black stripes to render it very clearly visible. Most fighter squadrons moved to armament training stations for live firing practice, where aircraft like K2857 were to be seen.*

Fairey Seal K3840 of No 7 ATC in late 1938 wearing standard green-brown/black-white camouflage, the black being beneath the port surfaces as prescribed. Like the Demon below, this machine was a target-tower used to give fighter squadrons firing practice (Ron Clark photo).

This I vividly recall seeing briefly in March, 1939, and felt quite flattered! The squadron 'codes' were selected at random, incidentally, and not duplicated on squadron aircraft in the UK (at least, not intentionally) and were in no sense combinations which could be 'de-coded'. One interesting point to note is that some squadrons carried letters widely differing from those listed in the appropriate Air Ministry Order. The letters used by the pre-war fighters in the period March-September, 1939, and associated squadrons and examples of their aircraft where known, are as follows:

Sqn	Letters	Serial no	Aircraft type	Notes
1	WA	L1689	Hurricane I	(Furies camouflaged, uncoded.) Previously had black and white under-wing colours correctly applied.
3	a) uncoded	K6147	Gladiator (camouflaged)	March, 1939
	b) OP:T	L1937	Hurricane I	July, 1939, small roundels
17	UV:B	K5346	Gauntlet	March, 1939
19	WZ:N	K9790	Spitfire I	April, 1939
23	MS:G	K5698	Demon	1939, as illustrated
25	RX:R	L1436	Blenheim If	May, 1939
29	YB:L	L8372	Blenheim If	May, 1939
32	KT:G	L1659	Hurricane I	May, 1939
41	PN	K9843	Spitfire I	May, 1939
43	NQ:D	L1726	Hurricane I	June, 1939. (Furies of the sqn were painted like those of No 1 Sqn, previously uncoded.)
46	RJ	L1853	Hurricane I	June, 1939
54	DL:D	K9901	Spitfire I	May, 1939
56	LR:R	L1987	Hurricane I	July, 1939, small roundels
64	XQ	L1478	Blenheim If	June, 1939
65	FZ:L	K9909	Spitfire I	May, 1939
66	RB:S	K9810	Spitfire I	March, 1939
72	SD	K9924	Spitfire I	June, 1939
73	HV	L1572	Hurricane I	July, 1939
74	JH:B	K9937	Spitfire I	June, 1939
79	AL:D	L1716	Hurricane I	July, 1939, small roundels
85	NO:J	L1833	Hurricane I	May, 1939
87	PD	L1646	Hurricane I	July, 1939
111	TM:V	L1820	Hurricane I	August, 1939
151	GG:K	L1768	Hurricane I	May, 1939
213	AK:F	L1790	Hurricane I	June, 1939. An interesting point here is that the war-time coding of the sqn was AK.
501	ZH	L1949	Hurricane I	July, 1939, small roundels
504	AW	L1956	Hurricane I	July, 1939, small roundels
600	MV	L1401	Blenheim If	July, 1939. YF was allocated
601	YW	L1518	Blenheim If	July, 1939. YN possibly used
602	ZT	L1018	Spitfire I	July, 1939
603	RL	K7924	Gladiator II	August, 1939
604	WQ:G	L6615	Blenheim If	July, 1939, WG was allocated
605	HE	N2308	Gladiator II	August, 1939
607	LW	K7995	Gladiator II	August, 1939
609	PL	L1083	Spitfire I	August, 1939
610	JE	K3311?	Tutor	May, 1939
611	GZ	L1080	Spitfire I	August, 1939
615	RR:A	K7854	Gauntlet II	July, 1939
616	QJ	K4085	Gauntlet I	June, 1939

Overseas there was as yet no need for camouflage, so fighters there—Demons, Gladiators and a sprinkling of Blenheim 1fs—were left in aluminium finish, except for the Blenheims which retained their 1937 bomber camouflage similar to that of the first Hurricanes, though they had black under surfaces with white serials. Their Type A.1 (Matt) roundels they kept well into the war years. Some of the silver aircraft nevertheless carried squadron code letters.

Continued on page 35

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RL21 A6M2-N Rufe	1/75	4/11
RL22 Zero Mk 52	1/75	4/11

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RL25 Raiden	1/72	4/11
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RL27 J7W1 Shinden	1/72	4/11
RL31 Val D. Bomb.	1/48	19/11
RL32 A6M7 Zero	1/48	9/11
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THE CHURCHILL TANK

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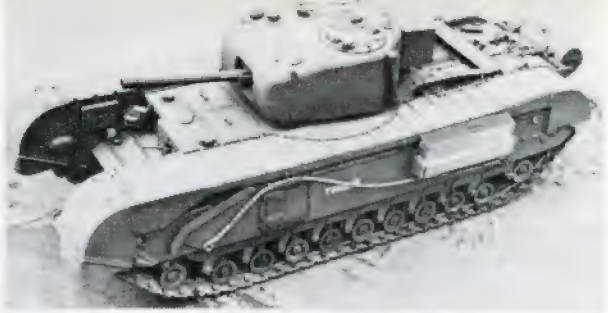
PART 3

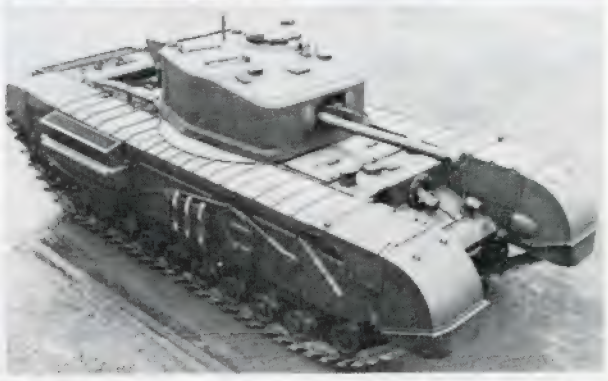
THE COMBAT VARIANTS

CONCURRENT with the Churchill III, another version of the vehicle was being built with the same 6 pdr main armament, but differing considerably in external appearance by having a cast turret. This was the Mk IV which was produced by Metro-Cammell, Chas Roberts, Leyland, and Beyer Peacock, the latter firm also being responsible for the A22D Churchill 3 inch Gun Carrier. Specification of the Churchill III and IV was essentially the same, but the cast turret of the Mk IV offered slightly better armoured protection than the welded turret of the Mk II. The following is a brief specification:

Weight, 82,908 lb; length 24 ft 1¾ inches; width overall 10 ft 8 inches; width over tracks 9 ft 2 inches; ground contact 12 ft 6 inches; track width 22 inches; fuel 150 gallons plus 32½ gallons in external tank; road range 127 miles; cross-country range 60 miles; power/weight ratio 8.45 hp/ton; power 325 bhp at 2,200 rpm; turret ring diameter 54½ inches; main armament 20 degrees elevation, 12½ degrees depression; armour—hull front 101 mm, glacis plate 38 mm/70 degrees, nose 88 mm, side 76 mm, rear 50 mm, floor 19 mm, hull top 15-19 mm, turret front and side 89 mm, turret 76 mm, turret roof 19 mm (Mk III) or 35 mm (Mk IV). In addition some vehicles had 20 mm of *appliqué* armour on the hull sides.

Impetus to the Churchill production programme resulted from its use in Tunis, and in December 1942 it was decided to alter the earlier Churchills to Mk III standard to carry a 6 pdr gun. Meanwhile the Grant and Sherman had entered service and demonstrated decisively the value of the 75 mm gun with its ability to fire HE as well as AP rounds and so give indirect fire support. Experience in the desert fighting led to a decision to adopt a 75 mm weapon for British tanks and in January, 1943, plans were made to fit this to the Churchill. Since 75 mm gun production would be limited at first, however, and was also needed for other tanks, it was decided to aim for a strength of approximately 30 per cent of Churchills armed with the 75 mm weapon. Another 10 per cent would be armed with 95 mm howitzers for the close-support role only, and the balance would continue to mount 6 pdrs. A further expedient at this period—and a purely local one—was the fitting of the complete 75 mm M3 mounting and mantlet taken from discarded Sherman tanks to standard Churchill IVs. This was done by army workshops in Tunisia and 120 vehicles were so modified. The resulting conversion was known as the Churchill IV(NA 75)—NA meaning North Africa—and these vehicles were the first Churchills to take guns of this calibre into action, when they were used with great success in the subsequent Italian campaign. The Churchill IV(NA 75) carried 75 rounds of 75 mm shells.



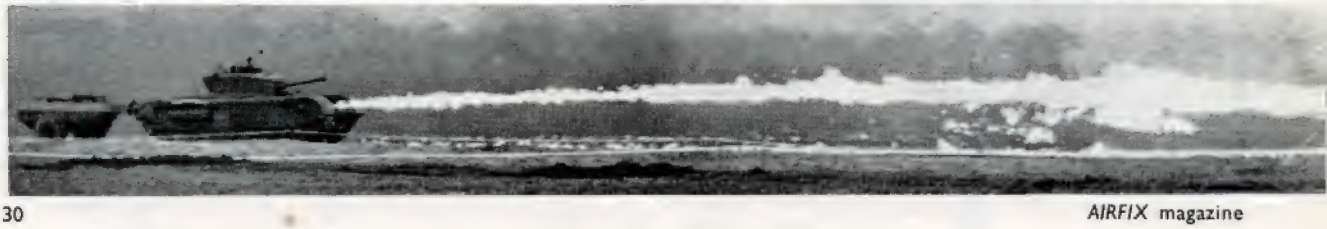


Top: *The Churchill IV with 6 pdr gun and cast turret. Note rotating hatch and square side doors.* **Above:** *Churchill VII had 75 mm main armament, cast/welded turret, and round side doors.*

A small number of Mk IIIs were converted to carry 75 mm guns, but the first 'standardised' production Churchill to carry the British made 75 mm gun was the Mk VI which, apart from the armament, was identical to the cast-turret Mk IV. It carried 84 rounds of 75 mm ammunition. The Churchill V was, in the meantime, fitted with a howitzer for the support role, firing HE only. Again, this was identical to the Mk IV except for its armament, which was the QF 95 mm tank howitzer Mk I with a co-axial 7.92 mm machine gun. 47 rounds of howitzer ammunition were carried.

Peak year for Churchill production was 1943, and 18 per cent of all British tanks built that year were Churchills

Below: *The Churchill Crocodile demonstrates the range of its flame-throwing equipment. White tapes in foreground mark path through minefield.*



—only the Valentine and Crusader were built in larger numbers. The Germans were now using the Tiger and late-model Pz IVs in Italy and the Churchill with 75 mm gun in that closely-confined country was proving its worth with its heavy armour, if only because nothing with a bigger punch and protection was available.

MAJOR RE-DESIGN

In an attempt to improve on the basic Churchill, the opportunity was taken with the 75 mm gun requirement to incorporate the lessons learnt in action with earlier marks. The Churchill VII, designated A22F, was virtually a complete re-design over the Mk VI though externally the appearance was very similar. The fundamental change was a new hull which incorporated in a single thickness —of up to 6 inches—the basic hull and the *appliqué* armour of the older marks. This altered the overall dimensions by an inch or two. The square side escape hatches gave place to circular hatches intended to reduce the armour weakness in this position, and the driver's vision hatch in the vertical front plate was replaced with a circular hatch. The turret was also a complete re-design, having cast sides and a welded roof. Improved vision was provided for the commander by the installation of a cupola in place of the previous rotating hatch. The weight was increased by these improvements to 40 tons, and the top speed reduced to 13 mph. Main armament was a QF 75 mm gun Mk 5 or 5A with 84 rounds of ammunition, and there were two Besa machine guns—one co-axial—with a total of 6,525 rounds of ammunition. Precise armour thicknesses were as follows: hull front 152 mm, glacis plate 57 mm/70 degrees, nose 140 mm, side 95 mm, lower sides 57 mm, rear 50 mm, roof 16-19 mm, floor 19-25 mm, turret front 152 mm, turret sides 94 mm, and turret roof 20 mm. The Churchill VII entered production at the end of 1943, and was the principal British heavy tank to take part in the invasion of NW Europe in June, 1944, and in the subsequent 1944-45 campaigns. It formed the main equipment of the 31st and 34th Tank Brigades and the 6th (Guards) Tank Brigade. A number of the earlier marks with 75 mm gun were also, of course, used operationally at this time also. The final main production version of the Churchill as a combat tank was the Mk VIII which was in all respects identical to the Mk VII except for the 95 mm howitzer as fitted in the Mk V. There were, however, several 're-work' marks of Churchill yet to come but these will be dealt with separately.

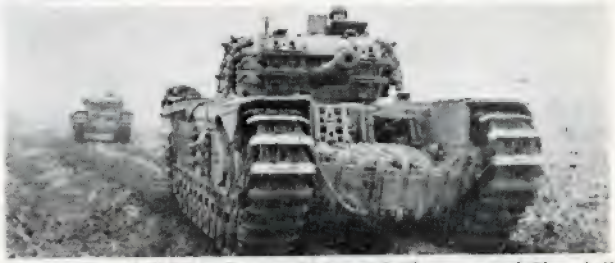
CHURCHILL FLAME-THROWERS

The first type of Churchill flame-thrower was the Oke, which was used experimentally at Dieppe (see part 2) and had been developed by the Petroleum Warfare Dept in a rush to test flame-throwing ideas under combat conditions. The Oke was fitted with a Ronson flame gun with a fixed elevation so that it could only be aimed by manoeuvring the tank. Range was 40-50 yds and the flame fuel was carried in jettisonable tanks mounted at the rear. The normal gun armament was carried. In the event, none of the three vehicles so fitted survived long enough to see action at Dieppe.

The Crocodile, which was the best-known and most famous of all flame-throwing tanks had a happier story and was destined to win great fame in the NW Europe campaign as one of the most formidable of the weapons used to breach the 'West Wall'. Development started in 1941 when the Petroleum Warfare Dept produced two types of flame-throwing projectors, one operated by cordite charges, the other by gas-pressure. Both were tried experimentally in Valentine tanks. After trials with the prototypes, the General Staff decided to standardise on the gas-operated projector and an installation was made on a Churchill tank. Experiments took place throughout 1942 and the design was finalised and placed into production in 1943. It was decided to use the Churchill VII as the standard Crocodile vehicle and sufficient were ready to take part in the D-Day landings. These did useful work on burning out beach defences and pill-boxes and subsequent notable Crocodile operations included the assault on the Seigfried Line. Some were also used in Italy.

Above, left to right: *The Churchill IV (NA 75) with Sherman gun and mount was the only wartime Churchill with an external mantlet. Churchill VIII was similar to the VII except for 95 mm howitzer main armament. Churchill VI with 75 mm gun.*
(All photos courtesy Imperial War Museum)

The Crocodile equipment consisted of an armoured two-wheel trailer weighing 6½ tons and containing 400 gallons of flame fuel, controls, and five pressure bottles containing nitrogen. Connection from trailer to flame projector in the tank hull was through the Link, a device through which the pressurised fuel could pass. A range of 120 yards was obtainable in favourable conditions, but the generally accepted range was 80 yards. The projector could fire 80 one second bursts or continuous fire. If the trailer was hit or damaged it could be jettisoned by a quick release device and the tank—which retained its main armament—reverted to its usual role as a gun tank. The flame projector took the place of the hull machine gun and was operated by the hull gunner. The Churchill Crocodile weighed 41.2 tons. Experiments were also carried out with mono-trailers (one-wheelers) and a modified Crocodile is believed to have been tested called a Cobra.



Above: *Churchill VI in France, 1944, with Sherman and Churchill track shoes welded in place for extra protection.*

NEW KITS AND MODELS

ANOTHER HELLER KIT

THE latest in the Heller Musée range is the 1:72 scale Loire et Olivier Leo 45. This aircraft was well known in the early days of the war to British spotters as several of them reached this country after the fall of France. Needless to say it gave quite a few identification headaches.

The model is a competent copy of the full scale prototype. It provides a very fully detailed interior which one may argue is lost when the fuselage halves are joined together or when the transparencies are added. There is little detail in the nacelles and actual engines are left out altogether. The undercarriage is fairly complicated though it has the advantage that the undercarriage doors are left in the nacelle section in the closed up position. To fit the undercarriage legs merely means cutting the thin join between them. Model makers who like to build aircraft with the legs in the retracted position will welcome this feature.

The construction details in the kit instructions were not to our mind adequate. The text is in French, which may pose problems to anyone not too familiar with the language.

Other than these minor points the Heller model of the Leo 45 is a good one. It is expensive at 15s 11d but we are certain that there will be a ready sale for this model to add to the already growing number of types in the Heller 1:72 range. BMW Models, Wimbledon, provided our review copy and hold stocks. *A.W.H.*

WEATHERING

LATEST Floquil paint product we've been trying goes under the amusing name of 'instant weathering' and that is just about the best way of describing what it looks like. It comes in a 6 oz aerosol spray can like a hairspray and is simply squirted judiciously over any model you wish to transform from a bright new 'ex-works' finish to the dirtier appearance of anything that has actually seen service. It gives a lovely neutral rusty-dirt covering and looks particularly effective on tank models, railway wagons, and model buildings. The price is 16s 6d per can, which is expensive, though it lasts a long time. Scenic modellers will certainly find it invaluable. 'Instant weathering' is available from Victors, 75 Chapel Market, London, N1, who supplied our sample. *C.O.E.*

LATEST CARS

LESNEY have released a very pleasant model of a Mercedes-Benz 'Binz' ambulance in their King-size range and, at 1:45 scale, this is the first model from this firm to the size preferred by most serious die-cast model car collectors. The model has opening side and rear doors, steering, and plated parts. There is a stretcher-patient with detachable blanket and the model is finished in the usual ambulance white with red cross insignia. Price is 9s 11d. Another new Lesney release, also in the King-size series, is a 1:80 scale Class Matador Giant combine harvester, nicely detailed and finished in green for 7s 6d. It has revolving cutters and a folding loading chute, and will make an ideal 'lineside' vehicle for railway model scenes or as a load for a trolley wagon. Lastly, Lesney have just made available a collectors' carrying case designed to hold 48 Matchbox size models in four detachable plastic trays. This takes the form of a small plastic attache case complete with lock and carrying handle—the latter being rather weak we found—measuring $12\frac{3}{4} \times 10 \times 3$ inches, all for 15s 11d. We think this is a good idea, and found in practice that the case was also excellent for carrying OO size tank models and slot racing cars, provided that some of the plastic partitions were cut from the trays as necessary. A lot of modellers will find this useful.

Latest Corgi release is a novel replica of a Lotus Elan hardtop with a completely detachable detailed chassis. Very intriguing this and most instructive. It costs 7s 3d. For the tinies, Corgi have released a Batman gift set comprising the Batmobile towing a Batboat in matching ghastly styling! This costs 19s 11d. Finally, Corgi have also issued a new free leaflet listing their latest models. *C.O.E.*

MODEL MACCHI

SLOWLY the kit manufacturers are beginning to realise that the Italian air force during the last war can provide any number of interesting models for their ranges. The Fiat CR42, Fiat G.50, Folgore, and one or two others are now on the market and it is hoped that there will be more in time.

Revell have just added to the list by producing an excellently detailed 27 part kit of the Macchi MC.200 Saetta. This is a delightful model, in the main accurate and, above all, well moulded without the addition of heavy detailing which can so often spoil the smaller size of kit.

The only criticism can be levelled at the tailplane. Here the span is not quite wide enough and unless the model maker can get over the problem by using the tailplane from another kit it will mar an otherwise good replica. The Revell Saetta costs 2s 11d. *A.W.H.*

PETE FROM TAMIYA

THE latest Japanese kit to reach us is a Navy Type O Pete. This floatplane makes an admirable model in 1:50 scale and contains 67 parts. Moulded in a grey plastic the parts fit well together from preliminary investigation and the

Continued on page 34

Realism of BMW Models' Green Label Haguro *model is apparent from this view of our made up sample under way. The kit costs 37s 11d from BMW.*

GREEN LABEL BOATS

1/250 SCALE MUSASHI

A really superb kit with one-piece hull, completely motorised by two motors and will take radio control equipment. This is a full sailing model if required. 41.7 in. long. WONDERFULLY DETAILED at **£9.19.6.**

Another fine model, the Aircraft Carrier ENTERPRISE **£8.19.6.**

AIRCRAFT

MONOGRAM 1/72 SCALE
AIE Skyraider, **13/9**; Curtiss P36 A, **9/–**; Bearcat F8F, **9/–**; Albatross HU 16B, **20/3**; P51B Mustang, **9/–**.

LINDBERG 1/72
Dornier Do 335, **8/1**; Henschell HS 129B, **8/1**; Arado 234B, **8/1**; Heinkel 100, **5/11**; Focke Wulf 190D, **5/11**.

1/72 Scale A.B.T. Decals 3/6 each.

14, German. Messerschmitt. Jagdgeshwader. 3/JG 27. H. J. Marseille. Also for Bf.109. Divers. 20 Insignes all Groups; 15, U.S.A. Superfortress. 393 Bombardment Sqd. Enola Gay. Hiroshima. 1945; 16, France. Nieuport. 17. 1914-18. Guynemer. Nungesser. Ambrogi 20 Insignes; 17, Luftwaffe Messerschmitt Bf 109 Divers Werner Molders, Heinz Bar, JG/51 All Gruppen, 20 Insignes; 18, Spad XIII France 1914-18. SPA 26. SPA 48. SPA 73. SPA 103; 19, France R. Navy Corsair. Also Sea Hawk. Aeronvale. Affaire de Suez. Also 1956 Royal Navy; 20, France Curtiss P-36 H.75. Six Curtiss 1939 to 1940. France-Vichy. Marin La Meslee. Accart Monraisse; 21, France Vichy Stripes for Wings and Fuselage. Also Cocardes 1938-39; 22, U.S. Air Force Curtiss P-36. H-75. 55th, 35th, 94th, 27th, Pursuit Sqd; 23s, Stripes. Blue, White and Red; 24s, Stripes. Green, Yellow and Black; 23, Lightning P-38. Mustang. Also Mirage. Lightning P-38 de A de Saint-Exupery; 24, For 3-Belgian Fighters. Gladiator I. Fiat C.R.42. Also Hurricane I; 25, Nakajima Ki.-43. Japanese. Royal Thai, and Indonesian Air Forces; 26, German. For 3-Stukas Ju 87B. Stukageschwader 2. Immelmann; 27, For 4-Messerschmitt Bf 109 G. Italia. Hungaria. Croatia. Germany. Also for 1 Fiat CR-42 Hungarian; 28, Soviet Union for 1-Polikarpov. 1-Airacobra. 1-Ilyushin-Shturmoviks; 29, Anti-Glare Panels. Olive Drab and Matt Black; 33, Fieseler Fil56 Storch for 2-Luftwaffe Storchs. Also Morane-Saulnier Type 500 (French Storch).

1/72 Scale A.B.T. Decals 3/6 each.

1, R.A.F. Tempest. No. 3 Squadron. Wing Commander Closterman; 2, Curtiss P.40. Escadrille La Fayette. Casablanca 1942. Also P.47 Thunderbolt. Group La Fayette. 1943-44-45; 3, German. Me. Bf 109e. JG/26 Schlageter Galland. Also 9/JG 26 Hollenhund; 4, German Focke-Wulf 190. 111/J2 Richthofen 1943. Also 9/J2 hptm. Schnell; 5, R.A.F. Spitfire. No. 610 Sqd. Battle of Britain 1940. Also No. 118 Sqd. Borough of Lambeth 1940; 6. France Morane 406c. G.C.111/6 Sergent-Chef Le Gloan. 1940. Also for Dewoitine 520. G.C. 111/6 Syrie. 1941; 7, R.A.F. Hurricane. No. 242 Sqd. Wing/Com. Bader. Also for No. 1 Fighter Sqd. Indian Air Force; 8, Finland Morane. HLeLv 28. Croix Gammees Bleces. 1941. Also for Me 109 HLeLv 33. Cocardes. 1954; 9, France. Dewoitine 520. Group. F.F.I. Maquis 1944. Also for German 520 J/G 105 Trainer; 10, German. Swastikas for Fighters and Bombers; 11, German. Fokker D.VII. JG.11. Oblt. Rudolf Berthold. Also for 15/JG.11. Lt. Von. Hantelmann 1914-18; 12, German. Camouflage 1914-18 Losange Top; 13, German. Camouflage 1914-18 Losange Bottom.

1/72 Scale Special A.B.T. Decals 3/6 each.

S1, France Armee De L'air. Cocardes 1914-1918. For Spad. Nieuport. Also for Morane. etc; S2, France Cocardes 1939; S3, France Cocardes Vichy; S4, France Cocardes Modern. With Yellow Ring;

1/48 Scale A.B.T. Decals 7/- each.

01, France Corsair. Suez 1956. Corsair De La 15; 02, German Camouflage Losange Top. 1914-18; 03. German Camouflage Losange Bottom. 1914-18; 04, German. 3-Stukas. St. G.2.

1/48 Scale A.B.T. Decals 3/6 each.

031, P-51D Mustang. Dallas Doll; 032, P-51D Mustang. Jumpin Jacques 3rd Air Commando Group.

NEW AIRCRAFT PROFILES

181 de Havilland DH5
182 Handley Page Heyford
183 Consolidated PBY Catalina
184 Messerschmitt Bf 109F
185 Yak 9 Series
186 Canadair Sabres

RED LABEL AIRCRAFT

4/11 each: RL.1. Zuiun, 1/78; RL.2. Avenger, 1/78; RL.3. Helldiver, 1/78; RL.4. Wildcat, 1/72; RL.3. Saiun Myrt, 1/72; RL.6. Shiun, 1/72; RL.7. Buffalo, 1/72; RL.8. Goshikisen, 1/72; RL.9. Zerosen, 1/78; RL.10. Dauntless, 1/72; RL.17. Judy Dive Bomber, 1/75; RL.21. Rufe Float Plane, 1/75; RL.22. Zero Mk 52, 1/75; RL.26. Army Fighter Shoki, 1/72; RL.28. Zero Float Plane Pete, 1/75.

24/11 each: RL.14. Ki-109 Mitsuibishi, 1/72; RL.15. Ki-67 Navy Torpedo Bomber, 1/72; RL.16. Army Heavy Bomber (Peggy), 1/72.

19/11: RL.31. Type 99 Navy Fighter Bomber Val. 1/48.

9/11: RL.32. Zero Fighter A6M7, 1/48.

8/11 each: RL.36. Jake Float Plane, 1/48; RL.37. Dinah Type 100, 1/48; RL.39. F-86 Sabre, 1/48.

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BACKWARDS STRAIGHT OR TURN RIGHT OR LEFT HAND
WITH REVOLVING TURRET BY REMOTE CONTROL

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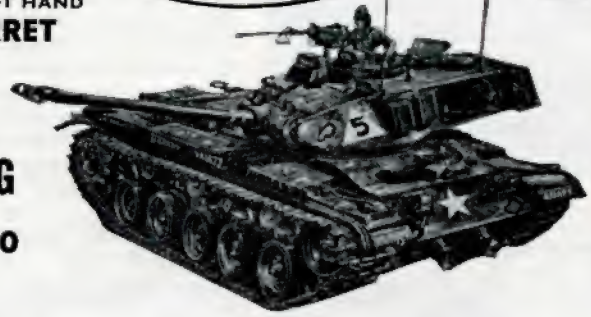

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detailing is happily subdued.

The instruction sheet is worthy of comment. For the first time an illustration is given in the kit instructions showing how to stretch plastic stem by candle flame. The copy is in Japanese but the illustrations are simple enough to follow. Additionally the instructions give details of no less than six different versions of the aircraft's markings and most of these are contained on the excellent transfer sheet.

Tamiya have once again produced an interesting and accurate model well worthy of a place in any collection. Our sample was supplied by Tamiya and is not yet available outside Japan. We will, however, give further details when it reaches British shops. *A.W.H.*

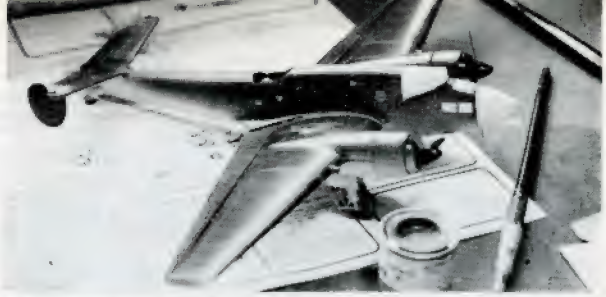
TANK TRUCK

MODELS of American railroad equipment have only a limited following in Britain, but a more than usually interesting sample which we have just received is a fine replica to HO scale of a US Army Transportation Corps flatbed car with a load of two Sherman M4 tanks. This is made by AHM, a well-known US model firm, and incorporates a great deal of finely moulded detail—even the graining on the wooden floor. Underside detail is very well done, though it's invisible from the normal viewpoint, and the truck runs on two six-wheel bogies with extremely free-running axles. The two Shermans provided as a load are standard Minitanks items which clip on to brackets fitted on the truck floor. A point about the model is that it is fitted with NMRA couplings which are the same pattern as provided in Airfix locomotive kits, so the truck will couple with Airfix stock if a small adjustment is made in height. The model is imported by Victors, 75 Chapel Market, London, N1, who supplied our sample. It costs 24s 9d, postage extra, and should interest military modellers. *C.O.E.*

RUSSIAN TANKS

THOUGH they have been available for some time, we had not hitherto seen the examples of Soviet tank models in the Minitanks 1:86 scale range. The importers, Model Hobby Products Ltd, have now rectified this omission and we were pleased to find that all the models were creditably accurate and made an impressive line up of armour in miniature. Those Soviet models so far available comprise the JS3, the T34/76, T34/85, T44, and T54, representing a couple of decades or so of Russian tank development. The T44 is, perhaps, the most interesting as few of these were built and the type is so little known that it comes as a surprise to see it in model form at all. We got the impression that the manufacturers may have cheated a little by using a few more T54 components than they should have done, but it's a nice model all the same. The T34s are excellent, differing only in their turrets, of course, but they have

The new AHM flat car with Minitanks Sherman load is to HO (1:86) scale.



Above: *Heller's new Leo 45 to 1:72 scale under construction. It is available from BMW Models of Wimbledon.*

'snap in' external fuel tanks which can be removed if desired to give a little variety in appearance. The JS3 seems a little under 1:86 scale but has the advantage of a more accurately shaped turret than any other JS3 model currently available. Each of these replicas costs 2s 6d except for the JS3 which is 1s 6d.

Another new Minitank release is an excellent model of the Federal German Army's standard Jagdpanzer tank destroyer with 90 mm gun. Detail includes an opening cupola and a realistic jerrican rack on the rear. It makes a nice companion for the Minitanks Leopard and costs 2s 6d. *C.O.E.*

TANK IN CARDBOARD

ONE of our Polish readers has sent us an interesting 'kit' in cardboard of a T34 tank to about 1:40 scale which has been produced by the Polish magazine *Modelarz*. It comes stapled in book form with a sheet containing a colour picture of the model, detailed history (in Polish), fully illustrated instructions, pictures, and a scale drawing, all surrounding the card sheets on which are printed the components. The parts are in full colour with a Polish emblem and call sign on the turret sides. The model is incredibly complex with scores of parts to cut out and stiffen up with card using the template sheet provided. Even the tracks shoes have to be cut out individually and folded to shape, and pins and matchsticks are needed for axles and fine detailing. Altogether it reminds us of some similar 'austerity' models produced in Britain during the war. It is not available outside Eastern Europe, of course, but anyone who is interested could probably obtain one on an exchange basis with a pen-friend from Poland. *C.O.E.*

TANK PROFILES

AS mentioned last month, Profile Publications Ltd have entered the military field with a new series of Profiles which will cover famous tanks and armoured cars. A list of 72 titles has been issued which gives all the releases for the next twelve months and the series starts with the Tank Mk IV of World War 1 fame and will end with the Chieftain, though the series as a whole will not run in chronological order. As with Car and Aircraft Profiles, the titles will be available individually —at a price of 2s 6d each—and released monthly in batches of six, or they will be available in three bound volumes.

First six titles, to be available shortly will cover the Mk IV tank, Pz VI Tiger 1, M4A3 Sherman, the T3 Christie, the Cromwell, and the M24 Chaffee. At the time of going to press we have only seen advance samples of three of these, the Tiger, Sherman, and Christie, so cannot give a detailed review at this stage. The Tiger, however, has an excellent colour spread of value to modellers, showing Wittman's famous vehicle in four-view, plus the Waffen-SS tank uniform and insignia. The Sherman Profile deals mainly with the later production variants and has a colour spread showing a US Army M4A3 (76 mm) with HVSS in 1945. These have a great many rare pictures and text of great interest to military fans. *C.O.E.*

Fighting Colours—from page 28

Second-line aircraft on front-line squadrons, eg, Magisters, Tiger Moths, etc, had yellow under surfaces which extended well up the fuselage sides. Exceptions were Battles used for pilot conversion to high-powered aircraft, which retained bomber camouflage but acquired Type B roundels.

THE FIRST OF THE FEW

No consideration of fighter markings, especially in September of any year, would be complete without reference to the greatest fighter of all time, the Spitfire. However much one may rate the Hurricane surely there can be no denying that, in all fairness, the Spitfire had 'the edge'!

K9787, the first production Spitfire wearing 'A' Scheme camouflage, was completed in June, 1938. On July 29, 1938, K9792 was allocated to No 19 Sqn, followed by K9789 on August 4. These two wore 'B' and 'A' camouflage schemes respectively, and arrived at Duxford in green-brown-silver finish. Upper-wing roundels six feet from the wing tip and of Type A.1 (Matt) were of 4 ft 3 inch diameter. Fuselage roundels were 35 inches across and under-wing roundels, Type A, were applied as large as the space at the appropriate centring would allow to avoid overlapping the control surfaces. Alongside came the surprisingly small one-foot under-wing serials in black.

The Spitfires of No 19 Squadron made their public debut at the opening of Cambridge Airport on October 8, 1938—by which time the squadron had applied yellow '19' numbering to the fins of the Spitfires, including K9794. During the winter several appeared with red 19s (eg, K9797), but no other colours were applied (as claimed elswhere) before the Munich crisis altered the whole appearance of the Spitfires at Duxford.

19 was now the premier fighter squadron—although if you never served with it you probably don't agree! Whether it was first in another respect, the application of unit codes, is not known. By March 15, 1939, all traces of '19' had gone from the tails of the Spitfires and 'WZ' in a dark shade of grey was being worn by the machines, which now had red-blue roundels and black/white under surfaces. K9805: RB-R of 66 Sqn in use at this time had half black/half white under surfaces with 25 inch diameter fuselage roundels (Type B) on this date, the red being the customary 2/5 of the total diameter. Such changes as were apparent during the summer were few, so that when the fighter squadrons went to war on September 3, 1939, they did so in their drabbest colouring for years.

Michael J. F. Bowyer

Above: *Gloster Gauntlet RR-Q, in early 1939, is of considerable interest for it gives proof of the painting errors referred to; the black and white colourings have been reversed. The machine has a three-blade metal (aluminium coloured) airscrew.* **Top:** *Spitfire 1 K9851 photographed late in February, 1939. Fuselage nose and port wing are silver and it carries a blotted out roundel and small black serial. The prop is black and has yellow tips. The starboard under-wing is already white, and to add to the assortment of markings a grey letter 'I' is visible. Possibly it was coded WZ too* (Ron Clark photos).

Zulu War — from page 25

and the walls were mostly of stone, but with some wood-work. The biscuit boxes are from balsa rod, measuring about 5 mm cubed, and Bellona supply lengths of wall which well represent either mealie bag or stone. Two wagons, constructed as described before, were also used in the improvised defences at Rorke's Drift.

For the base of the model, or indeed any other scene, use wood to build up contours tacked to a base-board, over which wire netting is stretched to give the ground a more realistic surface. Cloth is pinned over this to prevent the final Plaster of Paris cover from seeping through, when still wet.

Regarding the fight itself, there is not space to give a full account here, but it involved the 'hard luck' company of the 24th South Wales Borderers ('B' company, given unwanted jobs because of their CO's, Lieutenant Bromhead's, deafness), stationed at a house and mission station which had been converted into a depot for the main column, near the place where the column had crossed the River Buffalo into Zululand. Chard, a lieutenant of the RE, engaged in improving the crossing, had taken the real charge of the company.

After Isandhlwana, the Undi Corps of three of the finest of the Zulu regiments had swept down on to the Drift at about 4.30 pm on January 22, with all of 4,000 men. Chard defended his surrounded post with 81 effectives of the 24th, and another 40 or so wounded or injured soldiers in the hospital. Though the hospital and half the original position had to be abandoned under pressure before nightfall, the 24th fought on. However, held together by Chard's brave spirit, the remnants volleyed and clubbed and bayoneted the Zulu tidal waves off the barricades all through the blood-drenched night. Finally, at 4 am on January 23, the Zulu spirit melted away, and with that, their warriors.

Perhaps the Zulu War has the record number of VCs awarded in the shortest period of time: in the seven months of the war. over 20 were won, 11 at Rorke's Drift alone.

For wargamers, then, the Zulu War makes an interesting campaign for the tabletop. It was one of the last of the classic colonial wars and the last before khaki service dress was generally adopted by the British. It is not possible within the confines of these pages to cover every tiny aspect of the war, but enough is presented to get you started. For anyone who wishes to know more I commend they obtain the very complete and well-illustrated book on the campaign, *The Washing of the Spears* by Donald R. Morris (Cape, 55s). There is also, of course, the classic film *Zulu* which gives a good idea of the terrain and scenery.

Letters to the Editor

Letters to the Editor can only be answered in the magazine. Readers whose letters are published each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns.

Clubman cars

LOOKING through the readers' letters in my AIRFIX magazines I see no reference whatsoever to the Airfix Clubman cars. I really cannot understand this. The price is a little more than I usually pay (Scrooge is my middle name) but I'm sure, judging from the prices of some of the other stuff sold in the shops, that there must be quite a lot of people prepared to pay for one of these excellent little cars. I scraped together enough money and bought a BRM. I had a little difficulty with the self-tapping screws holding the motor to the chassis (I discarded my screwdriver and used a kitchen knife. Anyone else building one who has trouble with these please note) and, while it hasn't fallen apart yet I am a little doubtful about the body mounting screws which seem a little fragile.

This apart, the car is very fast, and represents very good value for money, being amongst other things, able to climb a track laid up our main staircase (about 1 in 2) with little difficulty. Why, though, is the very good moulding (only to be expected from Airfix) spoilt by such a large head? The car number, since it is obviously Jackie Stewart's car should of course be 12, and yet this is not included in the transfer sheet. Anyone wishing to check this should consult the cover of the AIRFIX magazine for June 1967. Incidentally, how does one represent a 1:32 scale tartan headband?

Changing the subject, can anyone tell me how to weight the Airfix P-38 Lightning so that it will stand on its nose wheel? I have packed every available space forward of the main wheels with lead, but still it's there on its tail and mocks at my efforts.

The only Airfix product which I can really complain about (except those Krazy Karacters, and the less said about those the better) are the Airfix paints. Why, Airfix, with your normally high quality, must you make paints which are awkward to get at, awkward to stir, and of inconsistent quality (as I found out when I ran out in the middle of an Me 110)? However, this is the only Airfix product which I dislike, all others being most satisfactory.

Keith Shortridge, Scarborough, Yorks.

Civil War regiment

I AM writing to tell you of a recent Civil War conversion I have made.

The Louisiana Tigers fought on the side of the Confederates. They were tough men from the docks of New Orleans, and the most famous battalion was the 1st Special Battalion, Louisiana Infantry, commanded by Major C. R. 'Bob' Wheat. They carried little equipment, their rifles being only single shot, muzzle-loaders, and they were noted for their speed.

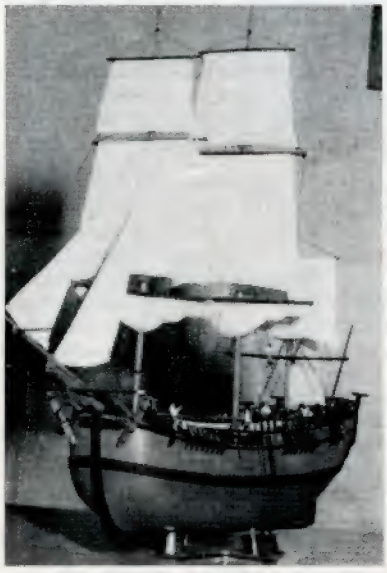
The 1st Special Battalion, Louisiana Infantry, can be best made from the men wearing long trousers from the Airfix Africa Korps set, as the baggy trousers are just right. First the webbing is cut away leaving the belt and equipment. Then the peak from the cap is cut away and puttees three-quarters of the way up the shins are formed. The arms are also changed to form the sleeves of the coat. When this is done a blanket over the left shoulder is added. A cap is also added, shaped like a night cap.

The figure is now ready for painting. The tunic was brown with red piping. The cap and shirt were red, and the baggy trousers were striped vertically red and white. The puttees were white and the shoes black.

P. W. Roberts, London SE16.

On display

MAY I congratulate Airfix on producing such a wonderful kit of Captain Cook's *Endeavour*. Airfix can now claim another first, as the kit I made is now on public display in our local public relations office and, as all good historians know, Gisborne was the first place Captain Cook set foot in on New Zealand soil away back in 1769. Gisborne people can now see just what the ship looked like, thanks to Airfix.



Also I have enclosed a photograph of the model which I can assure you, gave me many hours of pleasure in constructing it.

Geoff Hutchins, Gisborne, New Zealand.

Mr Hutchins' model is shown on this page.—EDITOR.

Moving tracks

I HOPE this tip will be of some use to the people who like to see the tracks turn, when pushing a model tank along. I recently bought an Airfix kit of the Mk I Tank and after assembling it, I found that the tracks had much difficulty in turning, due to there being no rollers in the track guides. I overcame this by placing some 'three-in-one' oil on the guides. This enabled the tracks to turn easily.

E. W. Jones, Pencader, Carmarthen.

Pre-war kits

I WAS very interested to see your article on pre-war kits. I have a *Boy's Own Paper* for February, 1921, and in it there is an advertisement for a 'Miniature Biplane' (type not stated). This model was made by The Masco Patents Mfg Co, of Newcastle-upon-Tyne. It was made of stiff paper, with movable controls, instrument board, air pump, pitot tubes, petrol service tank, etc. The dimensions were: span 12 inches, length 12 inches, and height 5 inches. The complete set of parts and instructions cost one shilling.

A. Hagger, London E15.

Zulu War points

I WOULD like to congratulate Mr Jones on his stimulating articles on the Zulu War. I did notice some minor errors, however, which ought to be corrected. Firstly, the 90th Light Infantry did not become the 2nd Bn Cameronians until 1881. So at the time of the Zulu War in 1879 they were still dressed as line infantry, ie, in red jackets with buff facings. Most pictures of the period show British infantry in the red serge jacket. This was of coarser red (not scarlet, which was only worn by officers who very often wore blue patrol jackets anyway) material than the full dress tunic. The facing colour was indicated on the outside of the cuff and on two patches on the front of the collar. It also lacked the white piping down the front. The serge jacket of the 21st (Royal Scots Fusiliers) had a plain red cuff piped

with white, and lacked the four white edged panels of the full dress doublet. It was merely cut away in front like the modern highland tunic.

Unlike the lancers, most of the infantry dyed the covers of their helmets light brown and this same treatment was often given to their white equipment. This all had to be scrubbed off again before the inspection by Sir Garnet Wolseley at the conclusion of the campaign.

A. M. G. Bantock, Kings Heath, Northants.

Starfighter modifications

IN the interests of accuracy, another small modification which can easily be made to the Airfix Starfighter kit, but which was not mentioned in Alan Hall's August conversion article on the TF-104G, concerns the undercarriage doors.

The kit instruction sheet states that if the undercarriage is to be fixed in the lowered position, the large forward undercarriage doors (parts 18 and 22), should be fitted in the closed position. That this is inaccurate can easily be seen by referring to the article's heading photograph.

To more nearly resemble the real thing, an additional strut should be added to each leg (the stems of Hunter rockets are about the right size for the job). One end of the strut should be fixed to the leading edge of the undercarriage leg, whilst the other end should point towards the nose and be cemented to the surface of the forward part of the undercarriage bay. It is just possible to pick out this strut on the port leg in the photograph already mentioned.

If the large forward doors are now fixed in position, resting on the added strut, it will be found that they will be in the correct partly open position.

R. A. Shettle, Dorking, Surrey.

Navy Hunter

I SEE from Alan Hall's article in last month's magazine that he has joined the vast number of people who have fallen for the mis-identity of Hunter XF365 at Lee-on-Solent.

He quotes it as appearing in the static park at this year's Open Day and as being a GA11 when, in actual fact, it is an F4.

This particular Hunter first flew on February 24, 1956, and served in the RAF with 112 Sqn, as 'B' of 71 Sqn and with 229 OCU coded ES-59. After being stored with an MU it moved to Fleetlands in 1958 as an electronic airframe and engine instruction unit for which purpose it is now housed at Lee-on-Solent.

Stephen C. Reglar, Arundel, Sussex.

Privateer conversion

I WOULD like to make a few comments regarding the conversion of the B24 Liberator to a PB4Y-2 Privateer featured in the July AIRFIX magazine.

The basic details of the conversion are quite sound, but the engine cowlings fitted to the Privateer were not in fact B24 cowls in a vertical position. The main point of difference being the air intakes which were not symmetrical on the Privateer, the upper one being smaller than the lower. This could be remedied fairly easily by using body putty to alter the shape.

Also the colour used on the fuselage sides and fin and rudder should be intermediate blue and not dark grey as stated.

I have found Humbrol Railway Enamel 117 mixed with a little 113 produces a very satisfactory USN sea blue. The intermediate blue can be made with about three parts Deltic blue to one part CPR grey.

For those who wish to simplify the conversion it would be in order to use the existing B24 nose turret, as early Privateers were not fitted with the spherical Erco model.

Regardless of my comments I liked the conversion; it makes a very impressive model. No doubt other modellers might turn their hand to one of the other 'Lib' variants such as a fairly straightforward PB4Y-1 or CB7, or the single finned B24N and RY-3.

Stuart Israel, Cheadle, Cheshire.

Roman dress

TWO statements in the letter from Mr J. R. Cadle of Enfield, Middlesex, regarding details of the defensive equipment of the Roman Army, place him at variance with one of the leading authorities on the subject, namely Graham Webster, formerly curator of the Grosvenor Museum at Chester.

Mr Cadle, whilst describing the dress of a legionary, states that 'a piece of leg armour, a greave, would be strapped to the lower right leg, which was not protected by the shield'. Webster was of the opinion that 'the legs were free of armour, and protection was sacrificed for mobility'.

On the subject of helmets, Webster states that 'the campaign scenes on Trajan's column make it clear that plumes were only worn on parade and they have the appearance of small upright feathers fixed on the top'. Mr Cadle, on the other hand, mentions that 'just before a battle the legionary would affix to it a crest'.

No doubt Mr Cadle is quoting on good authority and I would be interested to learn of the source of his information, as among my own papers I can find no reference to leg armour or plumes being worn in battle by the legionaries.

J. S. R. Mead, Harlow, Essex.

Imitation leather

I HAVE discovered a way of making realistic imitation leather seats for Airfix car models, and hope this will be of interest to any of your readers who are detail enthusiasts.

For this I use grained passe partout, which is self adhesive tape, and with a little care looks very good when stuck to the plastics. This method can also be used for trim on door panels and for dashboard trim.

R. C. Tonry, Market Harborough, Leics.

TT Rolls

FOLLOWING Bert Lamkin's article on motorising the Airfix Rolls-Royce I thought readers might be interested in further details of the Tourist Trophy cars. The one that came second in the 1905 race carried the number 22 which was painted right across the radiator as was usual in those days. Also as with all cars in the early Tourist Trophy races, full road equipment was fitted and both a driver and mechanic were carried. Reproducing accurately the top speed may be difficult in model form as they had a fastest speed of about 45 mph. What is more of an achievement is that in 1906 another 20 hp Rolls-Royce was entered in the Tourist Trophy races, again held in the Isle of Man, and it won at an average speed of 39.4 mph being driven by C. S. Rolls himself.

A. H. Briggs, Ruislip, Middx.

Mirage caption

ALLOW me to point out a mistake in your Profile article on the Mirage fighter (August issue). In the caption on page 455, drawing 2 was shown as a Mirage III-B, but surely it is a III-E because of the radar bulge, position of the cockpit, and the fact that it's a single-seater.

David Chadwick, Colchester, Essex.

Quite right, we made a typing error in the original caption. Thanks also to everyone else who pointed this out.—EDITOR.

Transfer tip

TO prevent transfers chipping up on application, I've found that a few drops of liquid detergent added to the water are most effective.

David Brackenborough, Reading, Berks.

Retracting undercarriage

I HAVE just completed the Airfix B-29 and I thought readers might be interested in my method of making the undercarriage retract. Before assembling the nacelles I painted their interior and that of the wheel doors. I then cut clear Sellotape into strips and positioned it on the insides of the doors, three strips on each, separated by the lugs on the doors. Then I attached them to the inside of the nacelle. These can be further secured by a lengthways strip of Sellotape if desired. On the inside halves, the strips can be led round on to the outside. They won't in fact show up after painting. The legs and wheels are now assembled and *placed*, not cemented, into their holes and the nacelle halves cemented together.

The nose assembly is dealt with in the same way except that a full-width piece of Sellotape is affixed lengthways for the hinge. Though this is rather crude and simple, I find that in practice it works very well.

John Crocker, Backwell, Bristol.

Irish infantry

AFTER buying a set of 1918 American Infantry, I found that they closely resembled the Irish Infantry in the dress they wore up to 1939. The main difference was in the helmet which was of the German 'coal scuttle' pattern. Cut of the uniform was virtually identical to the US type. Leggings and boots were of brown leather and the uniform was dark green. So anyone who wants Irish troops need only change the American heads for German heads and repaint accordingly.

P. O'Connell, Dublin 4.

Car carpets

I HAVE never seen any mention of interior carpeting in the making of model cars. When making open cars such as the Triumph TR4A Airfix kit, where the whole interior can be seen, I have found that the thin stick-on plastic sheeting with a baize surface such as is made by

Continued on next page

Letters — continued

'Contact' makes perfect scale carpet. Much better looking than a painted floor.

While on the subject of Airfix car kits, good value though they are, I for one would gladly pay a bit more for chrome parts which set the model off. Silver paint just doesn't look right. And could we have black plastic tyres? I hate painted tyres too!

M. J. Chitty, Sittingbourne, Kent.

Israeli colours

WHILE looking through back numbers of AIRFIX magazine, I came across a letter from Mr R. M. Algar (December, 1964, issue) describing the colour schemes of Israeli Air Force P-51D Mustangs.

However, I feel that the colours of these machines as described are somewhat incorrect. All of the Israeli Mustangs initially had overall natural metal finishes, with the pale blue Star of David on a white disc, in six positions, with black numerals behind the fuselage star. Prior to the 1956 Sinai campaign, some P-51Ds were given the standard desert scheme of an irregular pattern of blue-grey and stone over the upper surfaces, with natural metal undersides. The upper surface pattern followed British wartime fighter patterning. On camouflaged machines, fuselage numerals were painted in white. Prop spinners were normally black. An example of a camouflaged Israeli Mustang was allocated the numeral '54' in white, aft of the fuselage star.

Another interesting Israeli Air Force machine to model would be one of the several Boeing B-17G Flying Fortresses used for many years by that air force for bombing (one sortie was flown by a B-17G during the 1956 campaign). The Airfix B-17G needs no modification and the correct colour scheme is natural metal overall, with the stars in the usual positions. Black numerals were painted aft of the fuselage stars, an example being '65'. These were the same height as the national insignia. On a 1:72 scale model these should be $\frac{1}{2}$ inch in height.

R. Beasley, London W11.

Would readers B. Burkard of Munich, Germany, and Neil Taylor please contact the Editor with their full postal addresses?

Destroyers — from page 13

The gun 'tub' was made from scrap card with screens round it.

'B' and 'X' gun decks did not have blast screens due to turrets being carried, and these should be removed for this model. The lattice mast carried was taken from a *Tiger* but it is not difficult to build up from strips of 10 thou plastic card, to the drawing.

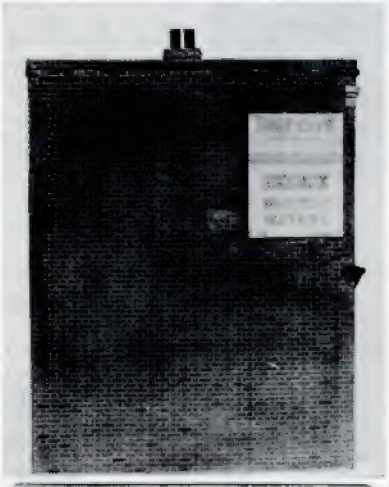
The forward director on the bridge was removed, and the aft director pedestal cut down to make the more squat director carried in this class. The top section (part 16) is fitted to the shortened pedestal. Cranes, boats, and rafts are now added, referring to the drawings, and the pennant numbers were taken from the Yeoman sheets of $\frac{1}{8}$ inch letters.

Sketches are given for other layouts, and the modeller can make up whole flotillas of these fine ships.

Cafe in Card — from page 11

correctly at the corners but the result will be worthwhile if you make the effort. Add a strip one course wide (this is most easily made by glueing a piece of brickpaper several rows wide on to thin card and then cutting it into strips one row wide) around the chimney, one course below the top of the chimney. Two chimney pots (I used short lengths of 2 mm diameter plastic tubing) complete the structure. Paint any exposed card grey to simulate mortar. The row of bricks which protrudes slightly around the building near the top, is modelled by adding a strip one row wide (brickpaper glued to thin card again) to each face one brick length below the upper edges of the walls. Note that on the side with the chimney the strip is interrupted. Finally cut strips of the capping one brick length wide (3 mm) and glue these strips of brickpaper along the upper parts of the walls between the protruding row of bricks and the upper edge of each wall. This gives the effect of a row of bricks placed vertically at the top edge of each wall.

This sort of building is seen in industrial areas and so some judicious weathering and application of grime is appropriate. A simple method is to lightly brush on powdered black poster colour allowing it to accumulate especially where dirt would normally collect on ledges and sills, etc, and then blowing it off. Quite a lot of the powder will adhere — more can be made to stick for an even grimier effect by brushing it on more heavily or by using a slightly damp brush. Painting on ledges or sills with a little water before dusting on the black powder poster paint will make more adhere at these sites.



Studying the appearances of prototype buildings and taking colour slides for reference will help you to achieve more realistic weathering effects in your model making, so whenever the opportunity arises look carefully at the buildings you pass from day to day and consciously note the colours you see. You will often be surprised to find that the colours you see are very different from what you expect. You will seldom see a black, for example, much more often a grey or brown. Even an area painted all the same colour usually shows variations in colour in its different parts due to different exposure to the effects of the weather, to uneven accumulation of dust and grime, and to splashes and spillage. Applying these observations in your modelling will add greatly to the realism you can achieve.

Top, left: *A view of the right side of the building showing the poster position (cut-out poster full-size is given on page 11).* **Left:** *View of the roof, full-size for 4 mm scale model. Note the broken slate effect as mentioned in the text.*

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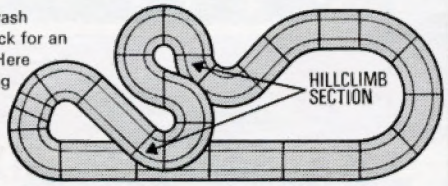

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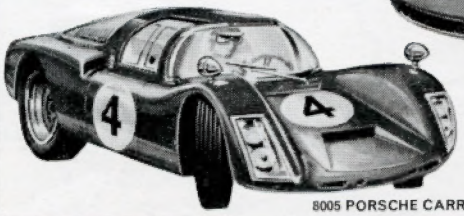

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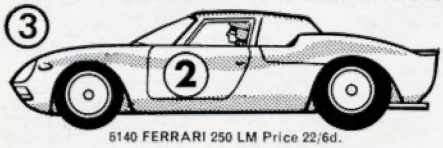

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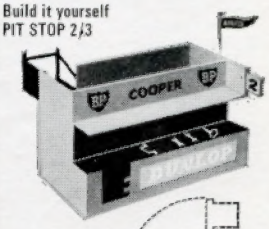

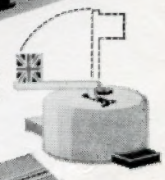

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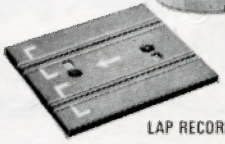

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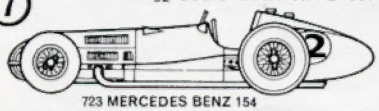

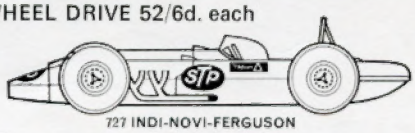

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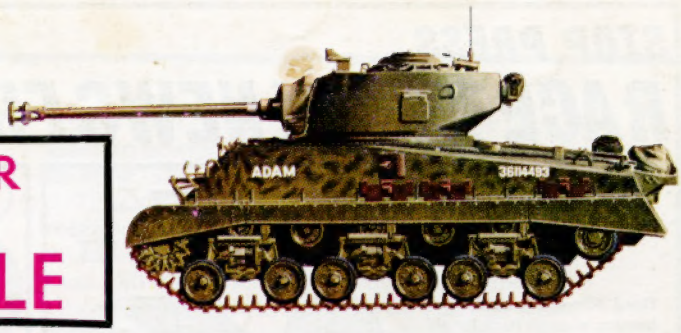

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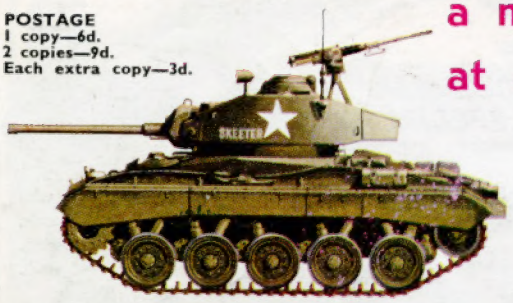

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